

# THE CONTRACT JOURNAL

INCORPORATING

THE BRITISH CONSTRUCTIONAL ENGINEER AND THE CONTRACTOR

No. 4,254 82nd YEAR

THURSDAY, JANUARY 5, 1961

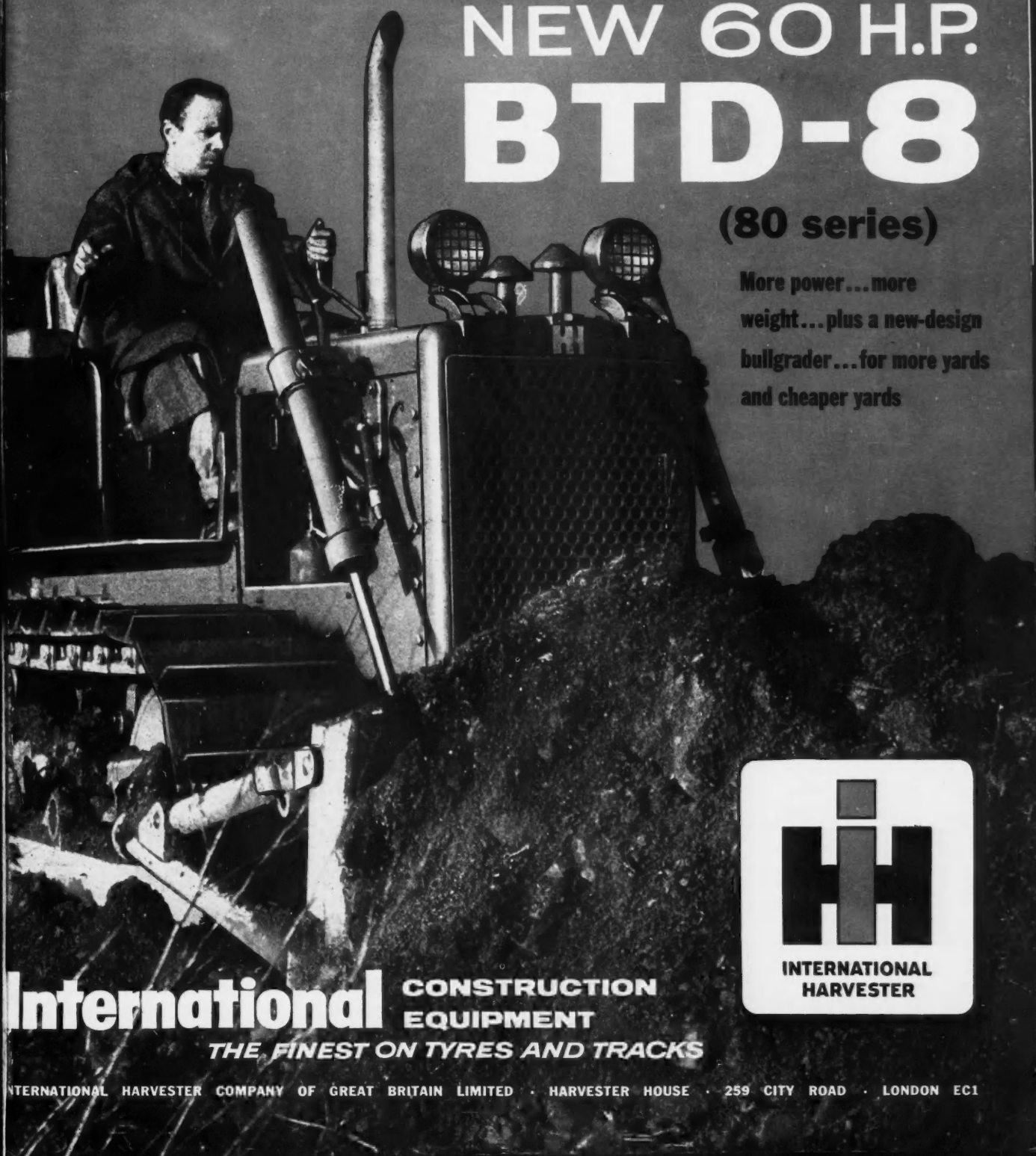
PRICE 2/-

**Newest in the International line—**

## NEW 60 H.P. BTD-8

**(80 series)**

More power... more  
weight... plus a new-design  
bullgrader... for more yards  
and cheaper yards



### International

**CONSTRUCTION  
EQUIPMENT**

**THE FINEST ON TYRES AND TRACKS**



INTERNATIONAL HARVESTER COMPANY OF GREAT BRITAIN LIMITED • HARVESTER HOUSE • 259 CITY ROAD • LONDON EC1

# OUTSTANDING FEATURES OF

**NOTHING CUMBERSOME** or top-heavy about the Dinkum but superb design and low overall weight and height.

**TREMENDOUS TRACTION** and manoeuvrability in confined areas and ability to work in wet and heavy conditions.

**NO TIME LOST** in getting in and out of the cab for levelling up on slopes but instantaneous levelling up from the operator's seat with hydraulic stabilisers adjustable from 6 feet 6 inches to 13 feet 6 inches wide.

**PERFECT VISIBILITY** from a De-luxe roomy cab—one with 2 sliding doors, 6 slide aside windows—and which locks up. Cosy in winter, cool in summer.

**WILL EXCAVATE CLOSE UP TO WALLS** without danger to operator. Separate trouble-free hydraulic systems for excavator and shovel.

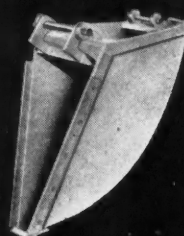
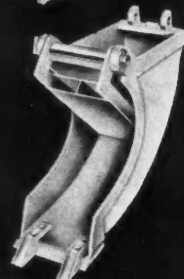
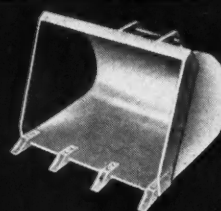
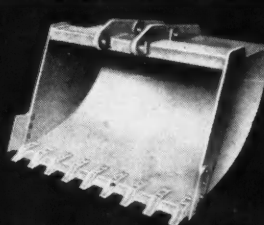
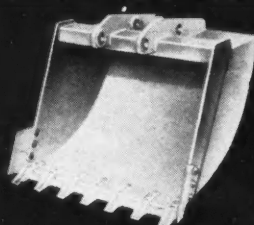
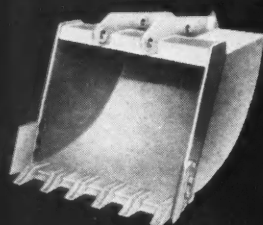
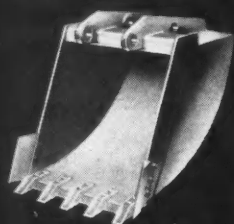
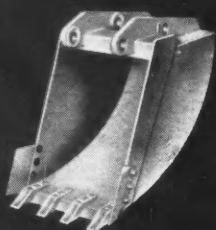
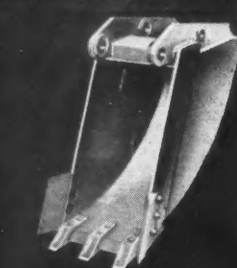
**THE SMOOTH CONTROLLED SLEWING** and fast working is only possible with the Dinkum system of hydraulics which enable several control valves to be operated simultaneously.

**UNIQUE DESIGN** allows exceptional accessibility for maintenance of machine and power unit.

**PRESSURE GAUGE AND THERMOMETER** in front of operator enables him to check that machine is operating at maximum efficiency.

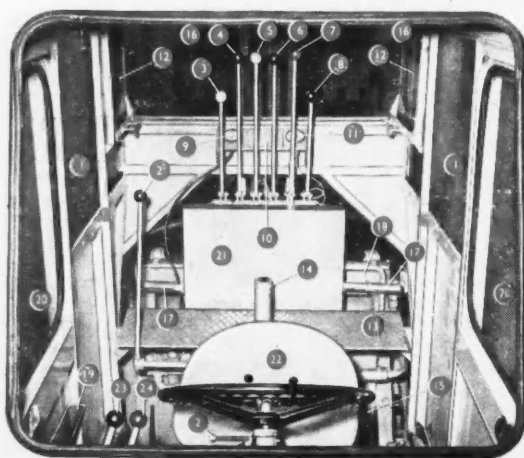
**LARGE PINS AND BEARINGS**, universal joints at ends of rams and banjo couplings at hose ends reduce maintenance costs.

**THERE'S NOTHING TO COMPARE WITH A DINKUM FOR RELIABILITY, LOW COST OF UPKEEP AND SPEED IN OPERATION.**



## A PURPOSE-BUILT DINKUM BUCKET FOR EVERY JOB

1. SLIDING SIDE WINDOWS
2. ENGINE THROTTLE CONTROL
3. LEFTSIDE STABILIZER CONTROL
4. LIFT RAM CONTROL
5. BUCKET CROWD CONTROL
6. DIG RAM CONTROL
7. SLEWING CONTROL
8. RIGHTSIDE STABILIZER CONTROL
9. HYDRO FLUID THERMOMETER
10. OPERATING INSTRUCTIONS
11. HYDRAULIC PRESSURE GAUGE
12. SLIDE-ASIDE REAR WINDOWS
13. FOOTPLATE

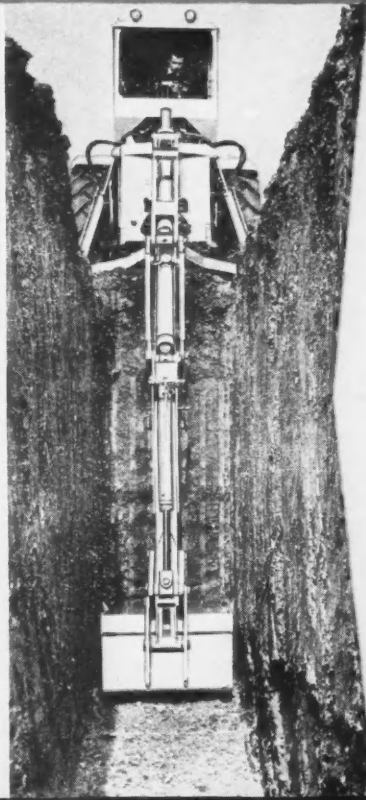
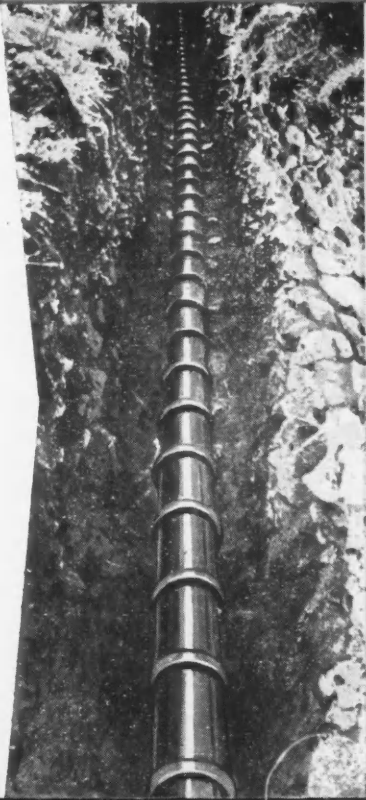


14. SOCKET OPERATOR'S SEAT  
(SEAT REMOVED FOR PHOTOGRAPHIC CLARITY)
15. TOOL BOX
16. UNINTERRUPTED VISIBILITY
17. FOOT SLEW CONTROLS
18. HYDRAULIC FLUID RESERVOIR
19. POCKET FOR LOG BOOK, ETC.
20. SLIDING CAB DOORS
21. ENCLOSED VALVE CHEST
22. FORWARD DRIVING SEAT
23. SHOVEL LIFT CONTROL
24. SHOVEL CROWD CONTROL

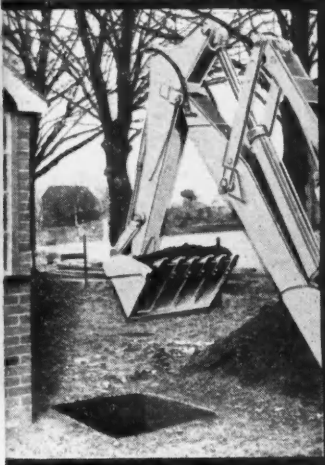


# THE *DINKUM 60*

In a class  
by itself  
for fast  
working in  
Chalk  
Shale  
Stone  
Boulders  
Clay and  
Rock



Clean  
straight  
sides  
and a  
level  
bottom  
in trenches  
up to  
72"  
wide



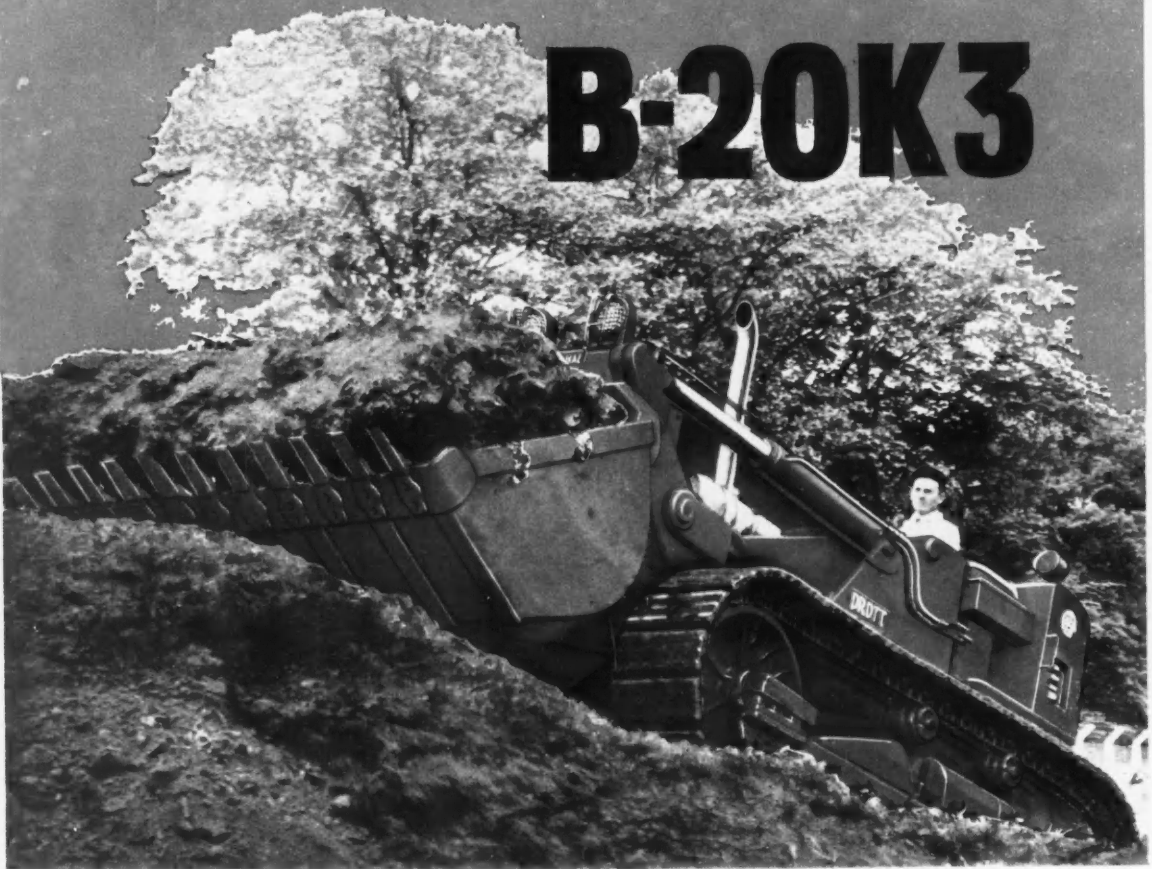
UNSURPASSED FOR **S Q U A R E** HOLES

# A BIG BITE

**3 cu.yd. DROTT**

For the **BIG** project

**B-20K3**



Photograph by courtesy of the Central Electricity Generating Board, Midlands Project Group, taken at Rogerstone Power Station, S. Wales.

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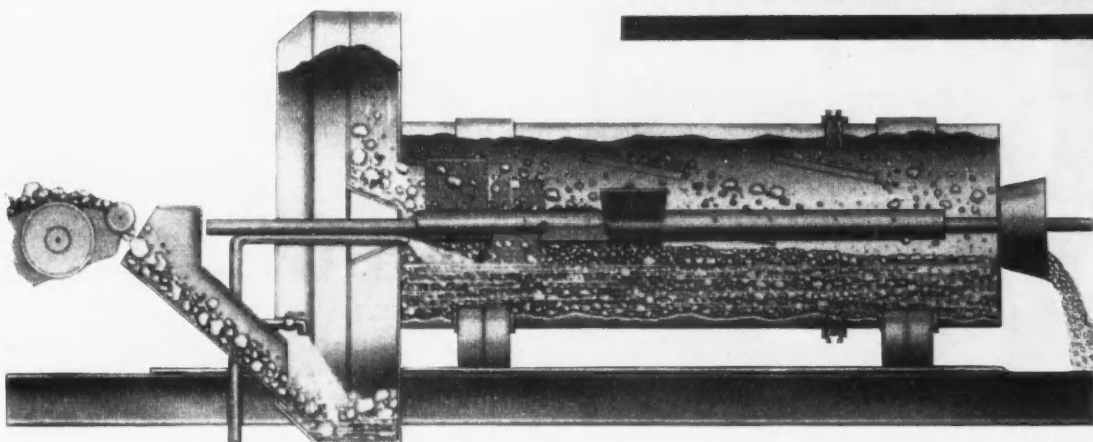


**BELFAST** Telephone: DUNMURRY 2511 (4 lines)

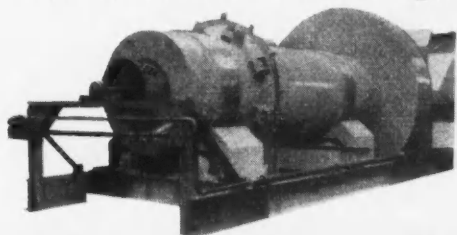
**IRELAND:** Sole Distributors for INTERNATIONAL HARVESTER, J. H. SAVILLE & CO. LTD. Tel: DUBLIN 373606 (5 lines)

# PRESENTING THE PARKER

# 'Cascade' SCRUBBER-MILL

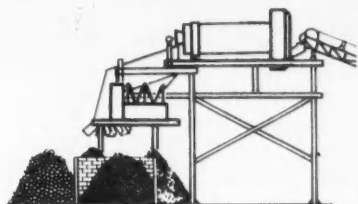


An extension to the famous Parker 'Cascade' range of scrubbers . . . with an even deeper 'deep-wash' scrubbing gained by the intense milling action of the material in the deeper washing barrel. Variable barrel speeds of 10 to 20 r.p.m.; extra wide feed ring; roller tracks accurately machined together; optional clay-beater equipment; rotary or vibrating screen . . . these are other features which you will appreciate.

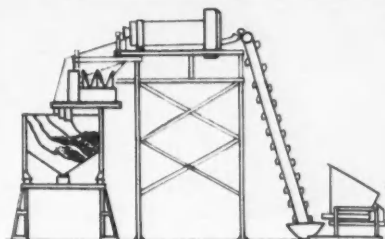


*...another outstanding development by*

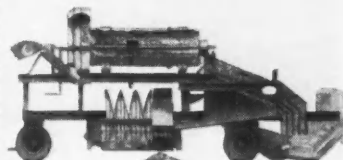
## PARKER



Overhead fixed arrangement with Parker 'Sandowheel' and ground storage bays.



Overhead fixed arrangement with Parker 'Sandowheel' and steel storage bins.



Mobile outfit with Parker 'Rapide' screen and 'Sandowheel'.

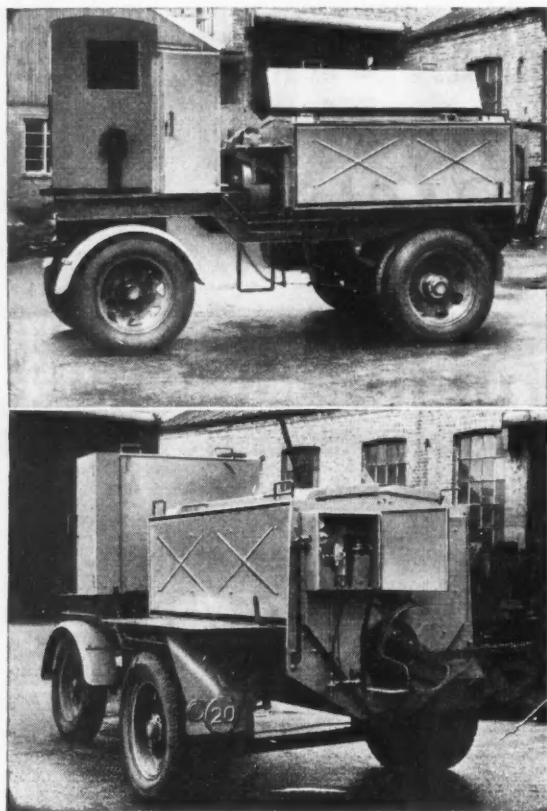
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*Take a coke-fired cooker  
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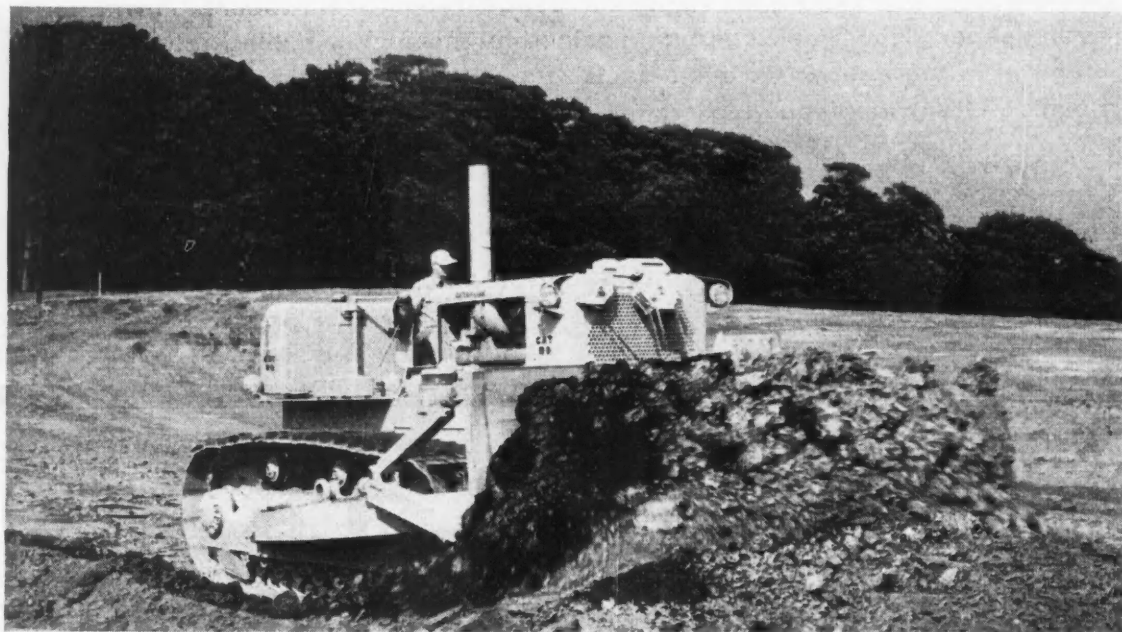
## Let us convert it

to a gas-fired cooker. That will cost you over £400 less than a new gas-fired cooker. You will save enough on the use of the converted equipment to make you consider whether you will have more conversions. They pay by the money they save in hourly running costs. By cheapening your work they increase profit margins.

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4

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Gravel pit and quarry model with heavy duty 14 x 30 rear tractor tyres and 1400 x 24 on Rear Dump, Muck Shifting model with 15 x 30 heavy duty rear tractor tyres. *Let us show you how you can cut your off-road haulage costs by 50%*

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Dozaloda Hydraulic Front Shovel for Fordson Major .....£325  
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1958 Shawnee Poole Model 7 Rear Dump .....£1,500  
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JCB-4 Hydraulic Excavator, with Front Loading Shovel .....£2,540  
Plus whatever Backacter Buckets required.  
JCB-4 Excavator Buckets, sizes 12in. to 48in. All ex stock.  
Blaw Knox 14/105 Cleanline Concrete Mixer, with Petter Diesel AVA2 Engine, Hydraulic Folding Weigher and Drag Loader Shovel complete .....£1,297  
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## Outstanding features:-

3 h.p. 4-stroke petrol engine  
Adjustable rate of blows per  
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Simplicity of design reduces  
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One-shot lubrication system  
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Lightweight for ease of handling

Everywhere on site ...

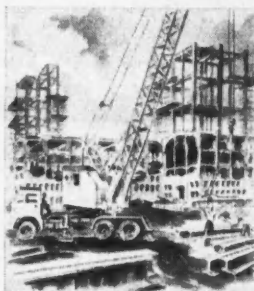
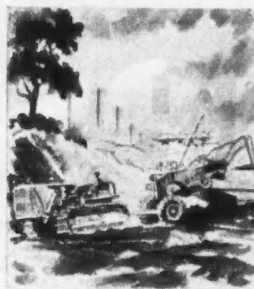
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### 12 TON RATCHET JACKS HEAD and TOE LIFT

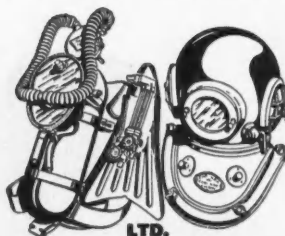
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start  
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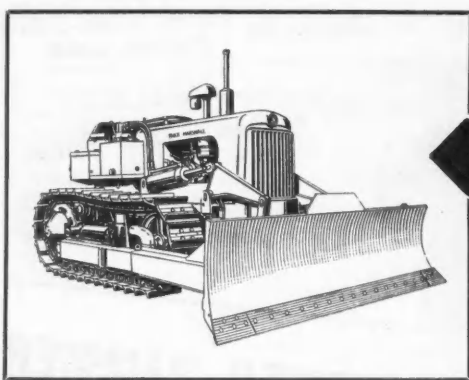
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One shot of EASY START in the air intake gives instant starting in the coldest weather—one shot of EASY START saves money, time and trouble.

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**PLATE COMPACTORS OF ALL SIZES ARE AVAILABLE FOR HIRE**

# COMPACTORS ENGINEERING LTD.

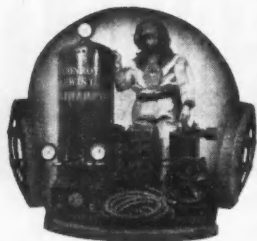
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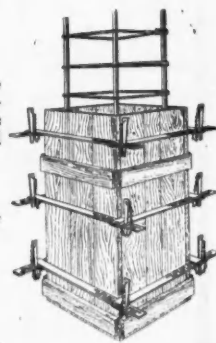
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Sizes to suit columns from 10" to 4' 6"

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The finest on the market today—  
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*Wooden Roller Shutter Doors!*

- Any number in one block.
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- Hinged or 'Up & Over' Doors.
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Batley Multiple garages provide an unequalled investment — ideal for Housing Estates, Public Utilities, Hotels, Private lock-ups, etc. Send for fully descriptive Brochure.

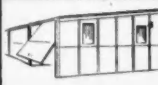
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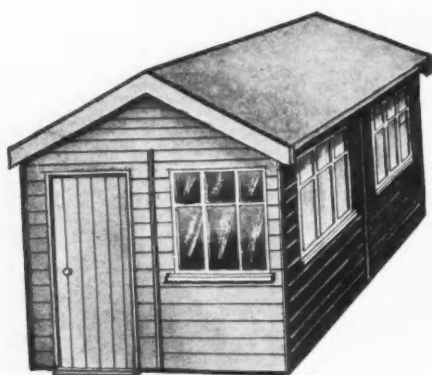
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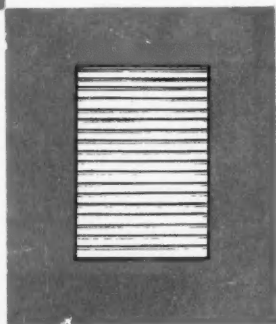
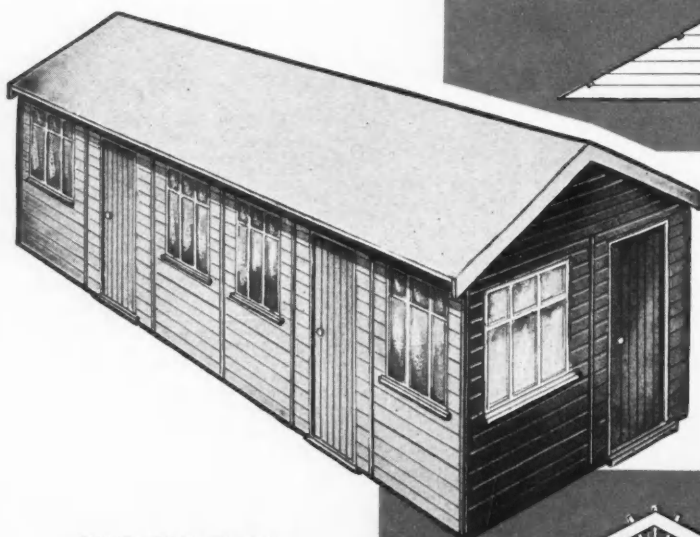
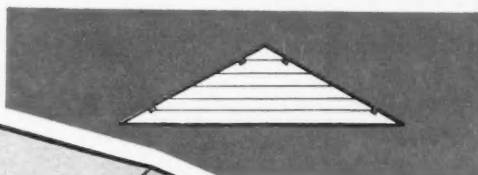
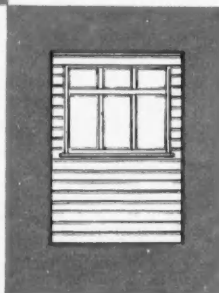
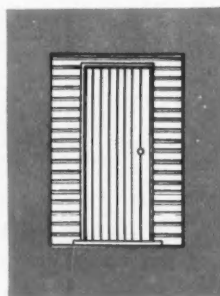
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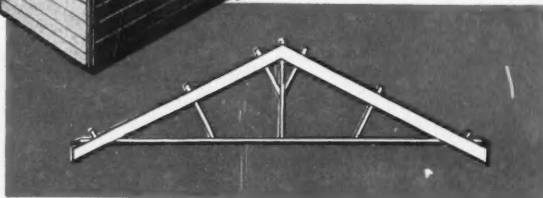


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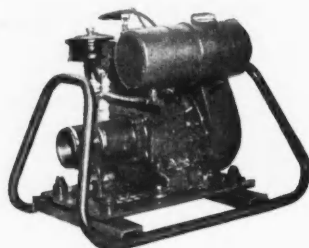
In the Winget 'Vibrocon' range, the vibratory power is at its maximum at the nose-cap end—where it needs to be—to ensure that voids are eliminated when the poker is withdrawn.

# Winget

## POKER VIBRATORS

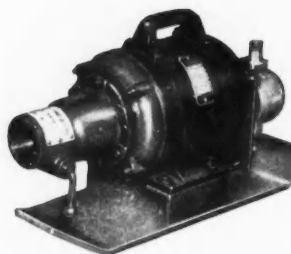
In the standard range, each of these poker heads is fitted with a 20' nominal length drive shaft of very high quality. Each model can be used with either the Petrol Drive Unit or the Electric Drive Unit.

### POWER UNITS



#### Petrol Drive Unit (PDU)

Villiers Mark 12 HS 1½ h.p. petrol engine governed for 2900 r.p.m. mounted on shock proof base plate within a tubular steel safety cradle. A quick acting coupling device is incorporated and a recoil starter is now fitted to facilitate quick starting. Total weight 77 lbs. Consumption 1½ pints per hour.



#### Electric Drive Unit (EDU)

1½ h.p. 110 v. or 440 v. 50 cycles 3 phase totally enclosed Squirrel Cage electric motor mounted on a robust steel skid. A coupling is mounted on the motor and within this is fitted a special ratchet coupling which eliminates damage to Poker Vibrator should the motor be incorrectly used. A quick acting locking lever allows the flexible shaft to be removed as desired. Total weight 85 lbs.

# 'Vibrocon'

## and POWER UNITS

Units to suit all types of contracts

Model	Diameter	Length	Frequency	Amplitude
SVO 25	1 in.	16 in.	10,000	0.045 mm
SVO 35	1½ in.	18 in.	10,000	0.70 mm
SVO 36V	1½ in.	18 in.	10,000	0.90 mm
SVO 45	1½ in.	19½ in.	10,650	0.82 mm
SVO 46V	1½ in.	19½ in.	10,650	1.15 mm
SVO 60	2½ in.	25 in.	9,600	1.25 mm
SVO 70	2½ in.	27½ in.	9,000	0.82 mm



### SELF CONTAINED POKER VIBRATORS

For use where a standard shaft driven model cannot be used, these units incorporate the standard poker vibrator head thereby delivering the same vibratory power in a more portable form. Simply plug straight into standard 110 volt SINGLE phase AC/DC supply. Where required a special light weight, polystyrene covered, transformer is available for converting 250/220 volts SINGLE phase current to 110 volts. The Electric Self Contained Vibrators comply with the Ministry of Works recommendations for portable electric tools.

#### Models Available

Model	Diameter	Frequency	Amplitude
ESV 35	1½ in.	10,000	0.7 mm
ESV 45	1½ in.	10,650	0.82 mm

To eliminate manual fatigue a safety carrying strap is provided which enables the operator to handle the unit with complete ease.



### Now Available!

A light-weight 1 kW petrol generator producing 110 v. D.C. current which forms the perfect team. Your operator, the generator, and an ESV Poker Vibrator. You can now vibrate anything, anywhere.

#### Applications

**Model 35.** Thin, but not deep sections. Light mixes of all general types. Precast products.

**Model 45.** Larger aggregate mixes than in concretes for Model 35 averaging up to 1 in. All similar applications to above but on a larger scale.

**Model 60.** Mass concretes of all general types of shallow section, including mixes with very low water/cement ratio.

Winget 'Vibrocon' Poker Vibrators are of the finest and most advanced design available today. The vibrators have frequencies up to 10,650 full impulses per minute, with a low flexible shaft speed from the motor of under 3,000 r.p.m. Only in the Winget range of poker vibrators can be found those features essential for the truly efficient placing of vibrated concrete in an economical and trouble-free manner.

#### Air Operated Units

For those sites where air is freely available or where safety regulations stipulate, two models are produced powered by 1 h.p. Atlas Copco Air Motors. Both units incorporate a standard Poker Head.

Model	Diameter	Frequency	Amplitude
AL45	1½ in.	10,500	0.82 mm
AL60	2½ in.	9,500	1.25 mm

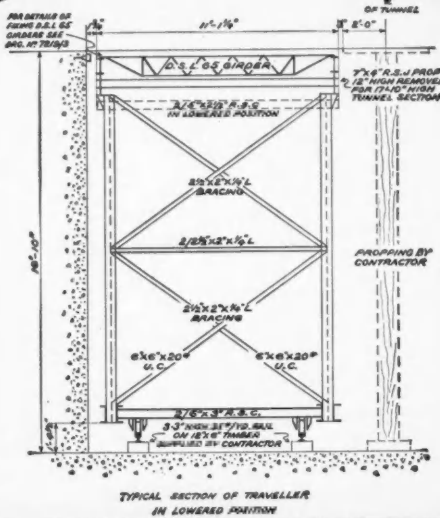
# Winget

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## SPEEDS THE CONSTRUCTION OF HYDE PARK CORNER UNDERPASS



Photograph by courtesy of Messrs. Cubitts, Fitzpatrick, Shand.

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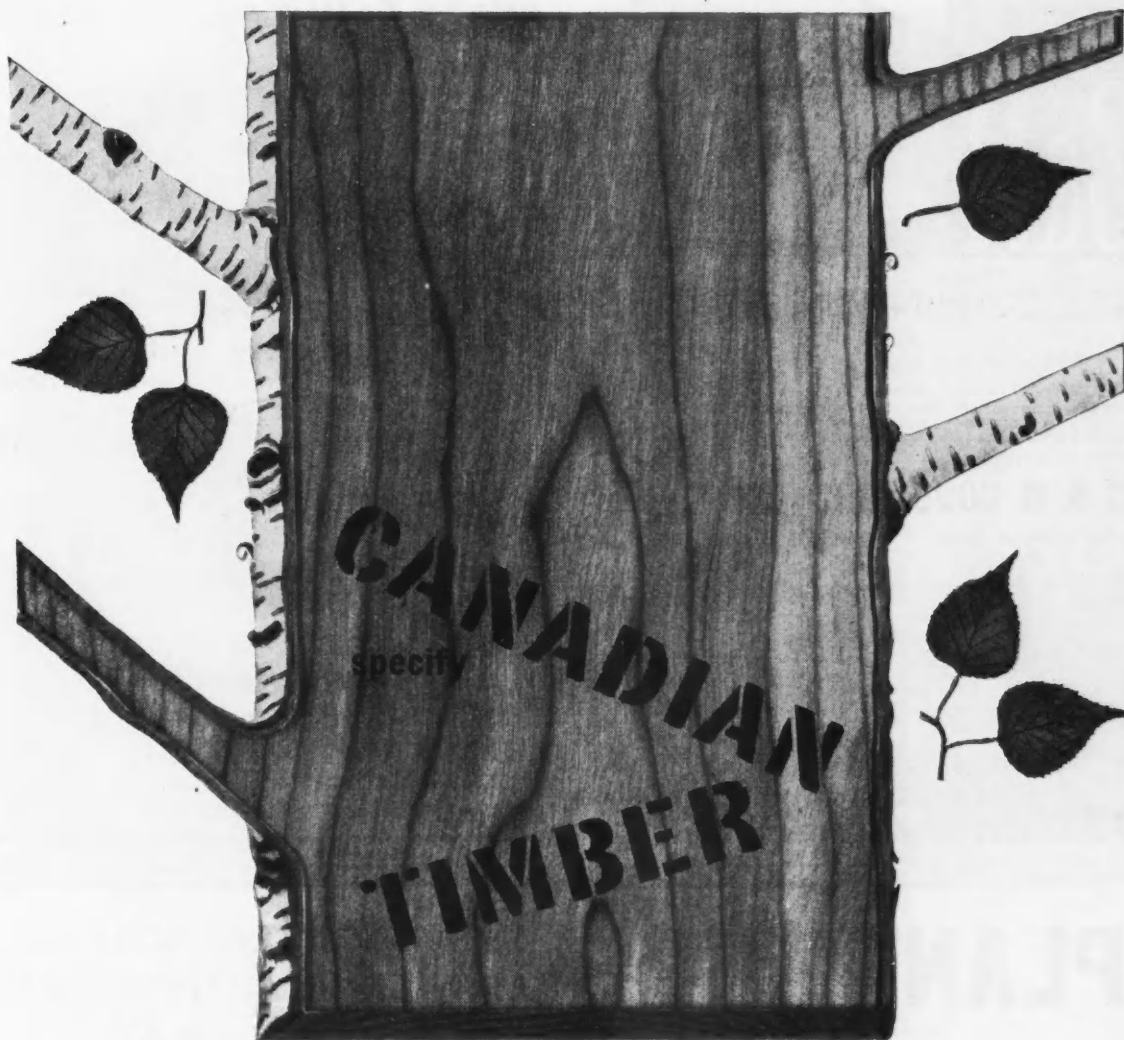
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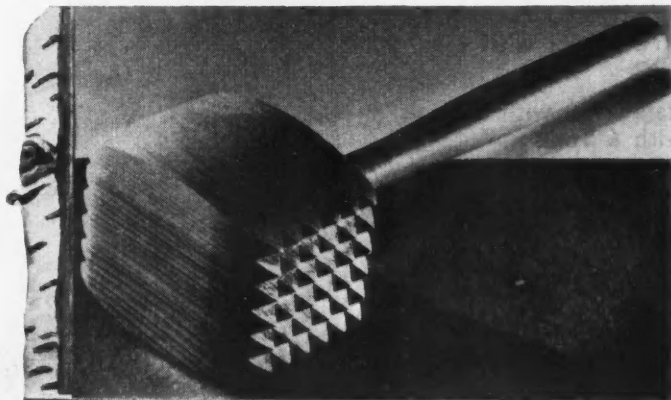
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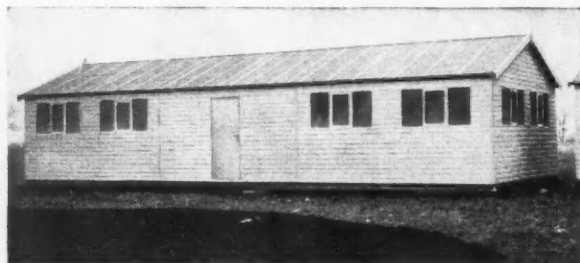
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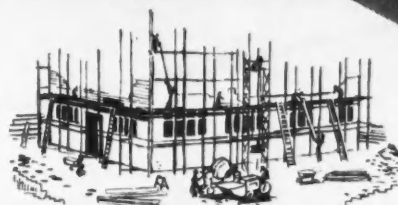
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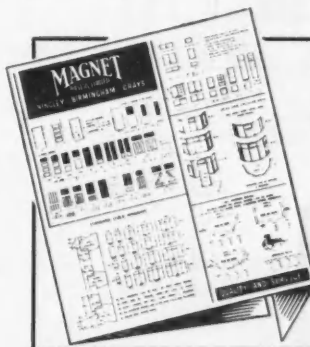
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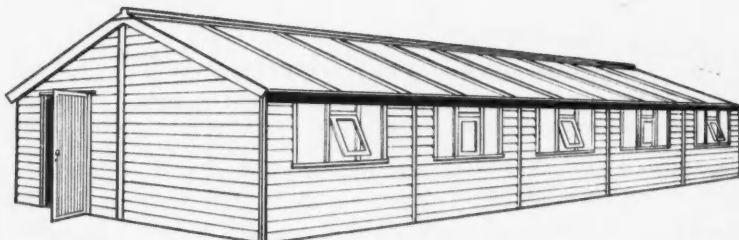
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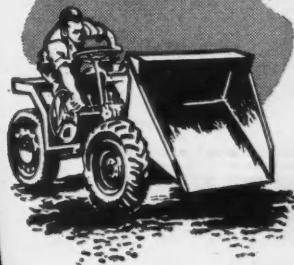
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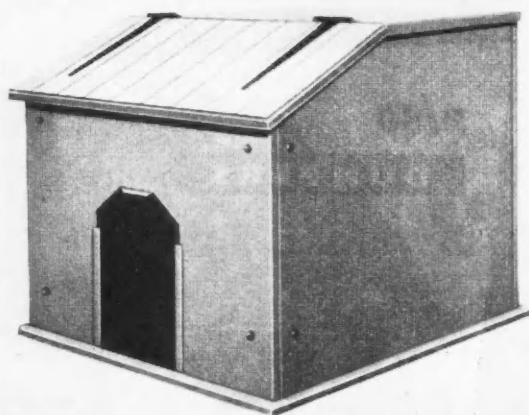
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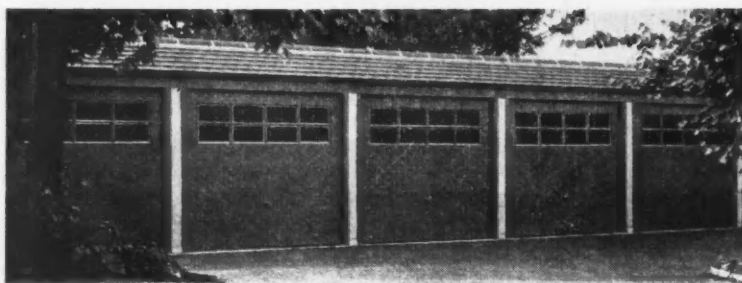
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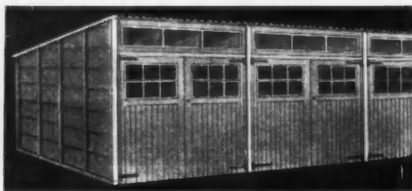
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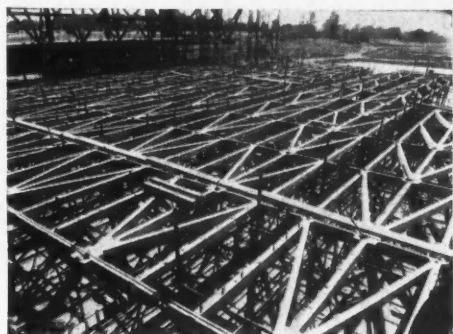
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The first building to be erected in the S.E. corner of Gatwick Airport, which has been developed as a maintenance area, is a 282ft long, 112ft wide and 41ft high hangar for Transair Limited. The hangar is remarkable for its roof structure; notably the inter-connected 110ft triangular precast and prestressed space frames which span the width of the building. At the front of the building, over the hangar doors, a 10ft. deep main beam was formed by fitting additional members between the ends of the secondary beams.

## Hangar construction at Gatwick

*Sponsor: Transair Ltd.*

*Architects: Clive Pascall and Peter Watson.*

*Design and erection of structural frame:*

*The London Ferro-Concrete Company Limited  
in association with A. J. and J. D. Harris.*

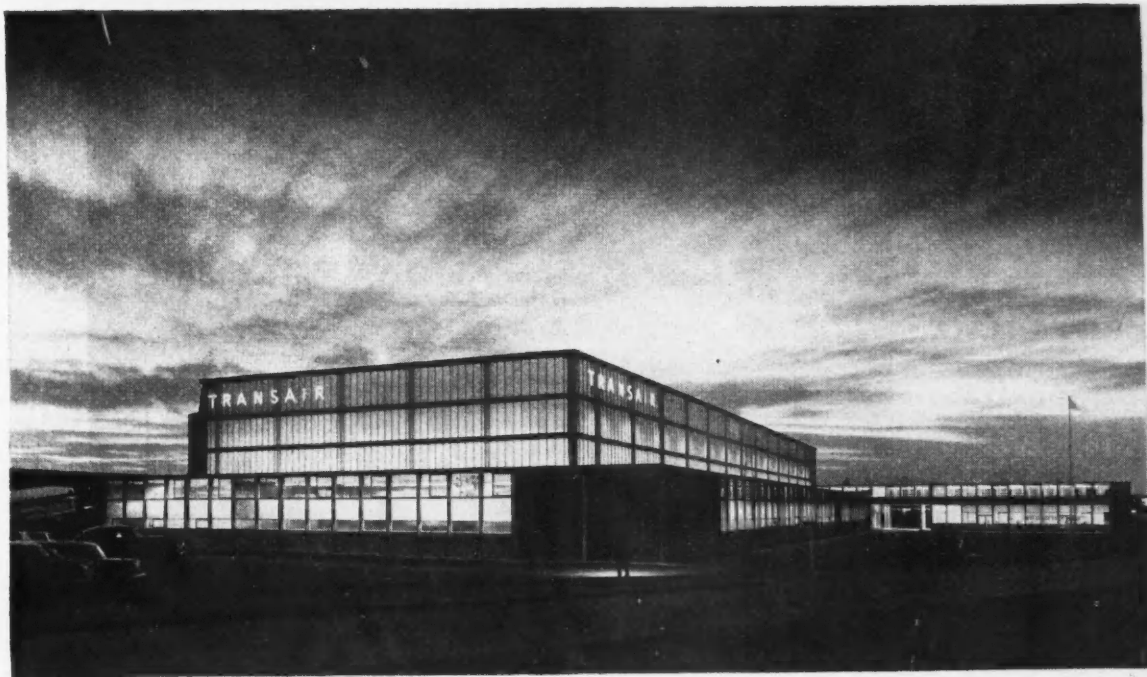
*Consulting engineers for the prestressed concrete apron:*

*A. J. and J. D. Harris.*

*General Contractors for building and apron:*

*Siv Alfred McAlpine and Son Limited.*

The beam is continuous and supported by three prestressed concrete columns to provide two clear spans of 140ft. The columns were prestressed on the Freyssinet system to support bending moments due to horizontal wind forces. The major prestressed force for the main beam was applied on the Freyssinet system. A leaflet giving comprehensive details of the complete project is available on request.

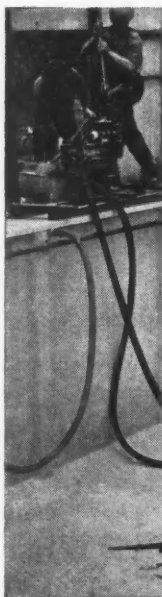


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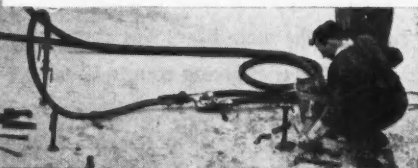
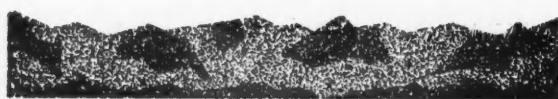
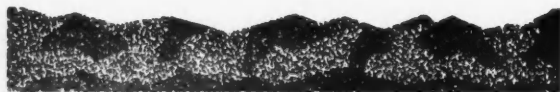


Illustration shows grouting floor cracks in Swimming Pool. One of the many money saving applications of the R-N System.



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on page xb, xib



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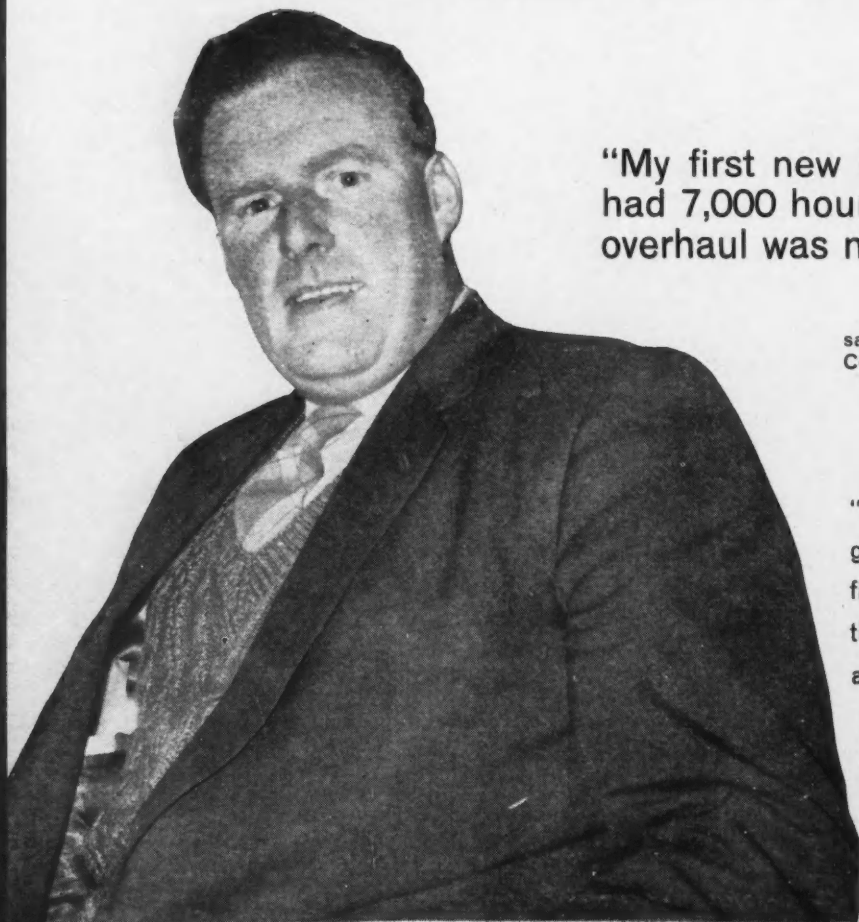


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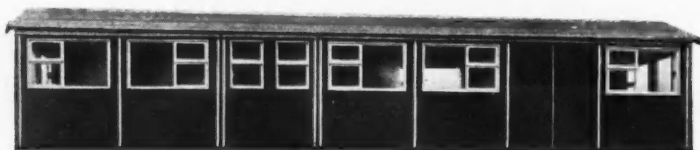
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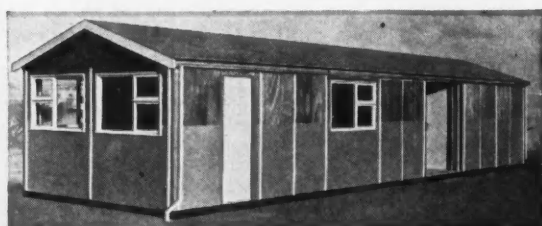
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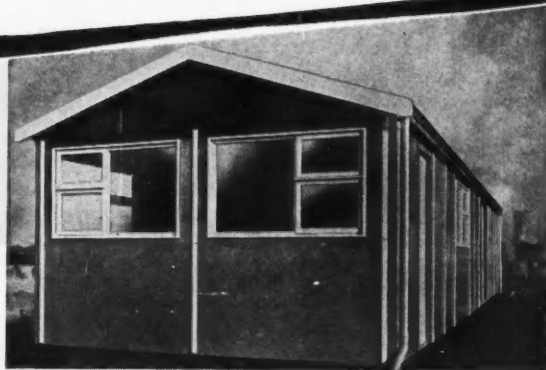
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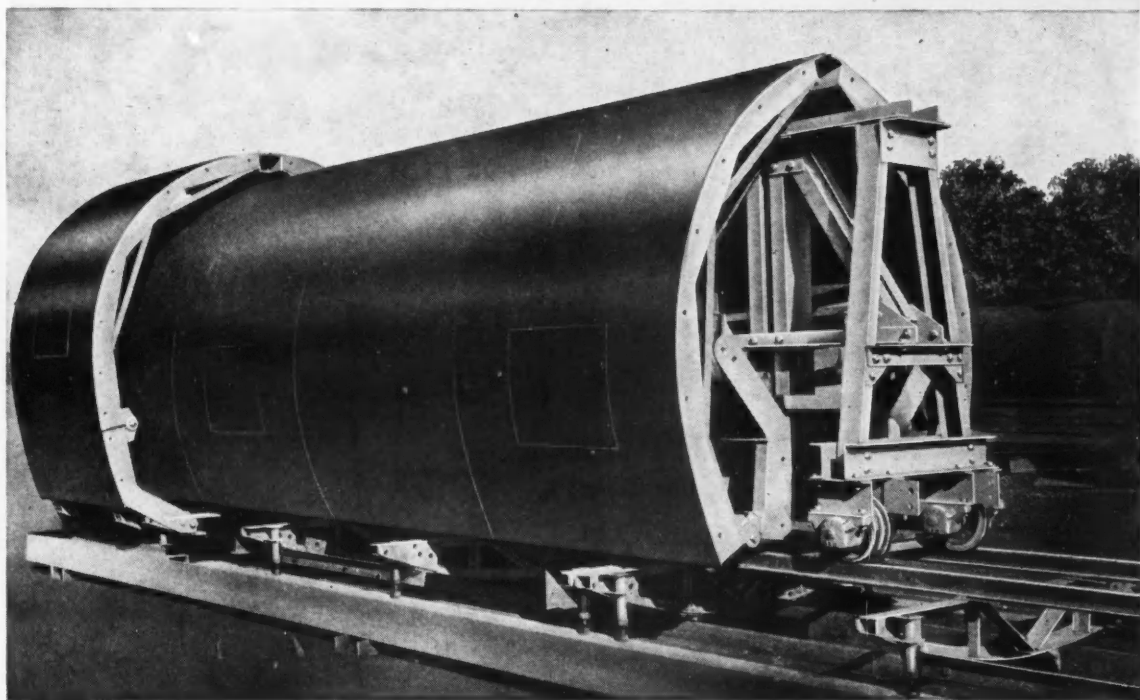
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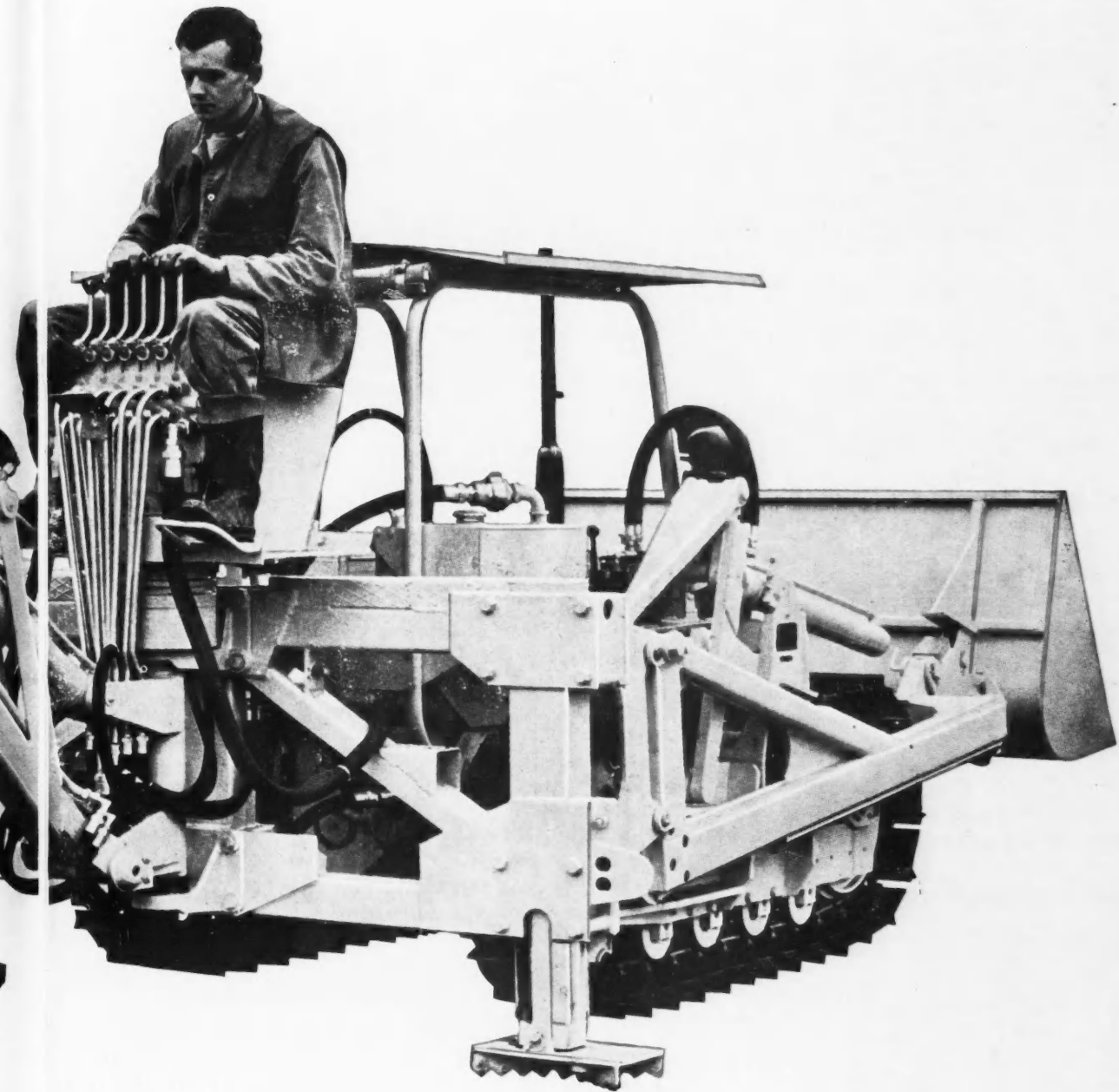
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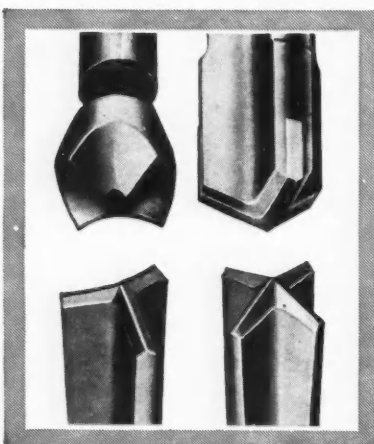
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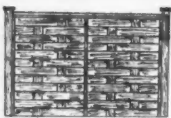
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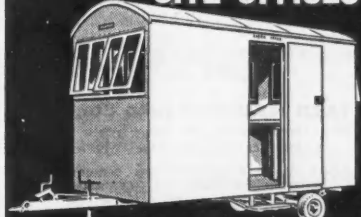
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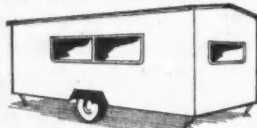
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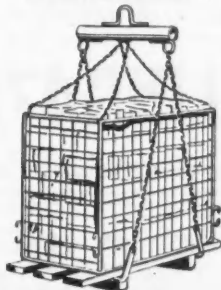
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EXCAVATORS, 1, 2, 3 and 1/2 cu. yd.

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DUMPERS, 1/2 to 4 cu. yd., Diesel.

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10RB FACE SHOVEL EQUIPMENT, c/w Jockey Pulley, £300.

Several 19RB DRAGLINE EQUIPMENTS.

19RB CLUTCH BANDS, Pt. No. R1.

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Sherman Trencher/Bray Shovel

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Alloy and Steel Scaffold tube, boards, fittings, Acrow props, concrete mixers, etc.

Prompt delivery, competitive prices and terms arranged

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5-ton MOBILE CRANE, 40ft. Jib, LONG and SHORT HIRE and REHIRE.

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1959 model 607

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CAPACITY:

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Complete with all ancillary equipment

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Caterpillar 463 SCRAPER, Serial No. 95D82.  
Birtley 80 SCRAPER, No. 85W224.  
Vickers Vigor TRACTOR, fitted Hydraulic Blade, very good condition, £1,350.  
37RB EXCAVATOR, 7000 Series, fitted Dragline, £3,500.  
Butters 2-ton Electric DERRICK, 60ft. Jib, 400/440/3/50 supply, £250.  
Paxman 4RQ DIESEL ENGINE, 48-h.p. at 1,100 r/m., with radiator, £170.  
Ruston 2V50 and 2V5HL DIESEL ENGINES, £65 each.  
Worthington Portable AIR COMPRESSOR SET, mounted pneumatic tyres, 260 cu. ft./min., good condition, £100 without engine.  
Broomwade NS, 30 cu. ft./min. at 100lb. p.s.i. direct-coupled on bedplate to 12½-h.p. slip ring motor, 400/3/50, £65.  
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Reavell High Pressure Set, SAT3, 4,500lb. max. pressure, coupled to Climax Petrol Engine, £85.  
WALKER AND PARTNERS, LTD.,  
23 Claremont Crescent, Sheffield, 10. Phone 62428-9.

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Reavell Model DS46E, 100 c.f.m., 100lb. p.s.i. with 22-h.p. motor, 400/3/50, all on C.I. bed, £250.  
Two 10ft. x 4ft. Vertical 3in. plate AIR RECEIVERS, £185 each.  
Holman 2-Tool T13D TRAILER COMPRESSOR, Dorman 2DL Diesel, £325.  
Bristol new 2-Tool COMPRESSOR on Fordson 1953 Diesel Major Tractor, £750.  
One Bristol 30 c.f.m. Electric 400/3/50 7.5-b.p. STATIONARY SET, on receiver 20in. x 58in., £165.

WILLIAM R. SELWOOD, LTD.,  
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IF YOU WANT TO PURCHASE OR HIRE any CONTRACTORS' PLANT, please get in touch with METAL UNION (PLANT), LTD., 75 Victoria Street, London, S.W.1. Telephone: VICTORIA 4868/9, 7429, 2177/8.

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 Excavators  
 Bulldozers  
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 Pumps, etc  
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COVENTRY CLIMAX  
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Delivered and collected with our Low-loader to your site.  
One Greens 10-ton ROLLER, with Scarifier.  
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Two Priestman Wolf EXCAVATORS, with all Equipment.  
One Priestman Cub EXCAVATOR.  
Two Allen 12-21 TRENCHERS.  
Several C.P.T. 2- and 3-tool AIR COMPRESSORS, complete with hammers.  
One Bin, Sykes Self-priming Diesel PUMP, complete with pipes and bends, and capable of pumping 90,000 gallons per hour.  
One 6in. Ditto, capable of pumping 60,000 gallons per hour.  
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Apply DUNCHURCH PLANT HIRE, LTD.,  
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19RBs, 10RBs, D7s, D4s, with Dozers and Scrapers, Drott 4-in-1; also 1yd. Crawler Shovels; and all Plant at very competitive rates.

## FOR SALE:

D4 2T, with L.P.C. Hydraulic Dozer, in exceptionally good order.  
Drott 4-in-1, in good condition.  
D7 CABLEDOZER, in first-class order.  
Selection of Modern TOWER CRANES.

Write or phone:

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3½-ton Ransomes-Rapier Petrol/Electric GRAB CRANE.  
Hibberd Simplex LOCOMOTIVE, 2½/3½-ton model, narrow gauge, powered by National 2D Diesel Engine.

Six Tipping BOGIES.  
2-ton Neals CRANE, on Crawlers, Type NMC No. 2459, Ruston 2VTH Engine, 30ft. Jib.  
MONORAIL, complete with Transporter, 24 straight rails, three curved, and necessary pedestals.  
No. 6 McKiernan-Terry HAMMER.

F. PARKINSON, LTD.,

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Windsor 3434 or 3435 or 3384.

AXWORTHY AND COMPANY, LTD.  
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Two Coles Diesel/Electric Rail SHUNTING CRANES, powered by Perkins P4 Diesel Engines, fitted 50ft. Swan-necked Jib, extended 4-wheel carriages for shunting purposes. The cranes new 1951 and in good order throughout.

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Capacities : 4 · 5 · 6 · 10 · 15 · 20 · 22½ · 25 tons

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## ROADS AND RUNWAYS OFFER FOR SALE:

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315 c.f.m. C.P.T., powered by Ruston 4VRH Diesel, Berger starter, mounted on four pneumatics.  
Two, £800 each.  
520 c.f.m. Air Pumps, powered by Dorman 6K Diesel, mounted on four pneumatics, £1,100.  
110 c.f.m. Broomwade SV128 Portable, £250.  
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Two 20-ton Model 201, with Pullway and 250lb. Weigh Hopper, £285 each.  
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Two ½yd., Side and Bottom Discharge.  
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Four 10 cu. ft., Petrol Engine-powered, £200/£275.

HOISTS:

Four 20/30cwt. A.C.E. Platform Hoists, £400 each.

ELECTRIC HAMMER DRILLS:

24 Victor Style 91VIB, £5 each.

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350 Bin. x 10in. Long Heavy-Duty, 52s. 6d. each

ROADS AND RUNWAYS.

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One 19RB, with Forward Shovel Equipment, Series 13000, in good condition. Available immediately, £1,950.

One Muir-Hill 10BD 3 cu. yd. Diesel DUMPER, rebuilt and fitted with dynamometer tested Ford 4D Engine, £425.

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1960 Dinkum DIGGER Major.

1960 POWER SHOVEL.

1960 TRACTOR UNIT, with cab, four months use, cost £2,400 new. No reasonable offer refused for quick sale.

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Smith 210 Super EXCAVATOR,

No. X203, Dorman-Ricardo 2-cyl. Diesel Engine,

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Skimmer Equipment with two Buckets, all in very good order, £595.—ERNEST DOE AND SONS, LTD.,

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ROLLERS OF ALL TYPES

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PETROL  
AND  
STEAM  
ROLLERS

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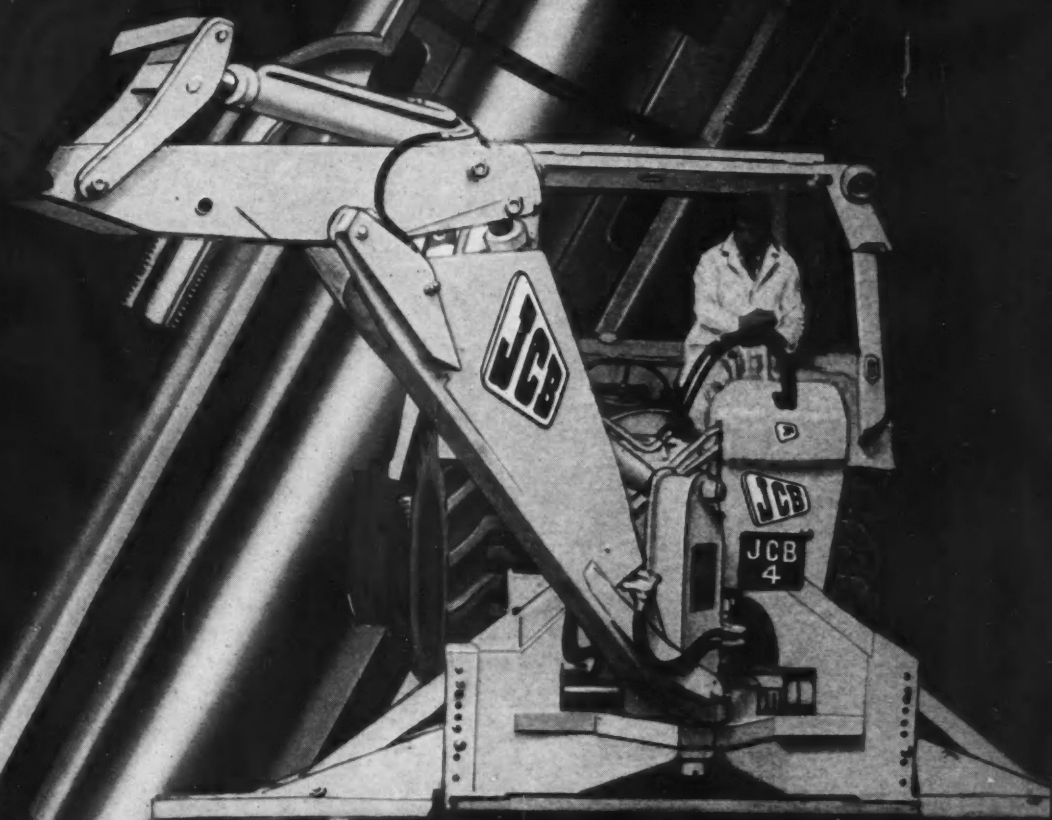
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# ★Further Classified Plant Advertisements on pages 89-96

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10-ton Butters, Steam, 20ft. Jib.  
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7-ton Butters Mono Tower, Electric, 140ft. Tower, 127ft. 6in. Jib.  
15-ton Butters Mono Tower, Electric, 120ft. Tower, 127ft. 6in. Jib.

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Neals 4/6-ton Crawler, 1951, 45ft. Jib.  
Neals 2-ton, pneumatics.  
Jones KL66, pneumatics, 1957, 60ft. Jib.  
Coles 12 1/2-ton Mobile, on pneumatics, 80ft. Jib.

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10-ton Lorain MC3, 70ft. Jib and Fly Jib.  
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5-ton Coles Mk. 7, Series 7, with 24ft. Cantilever Jib.

**ROADS AND RUNWAYS,**  
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**FOR SALE, Bray BL25 TRAXCAVATOR, new December, 1958. Write Box P.3300, "The Contract Journal."**

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PLANT SALES LTD.,

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Telephone: PADDington 2663-4

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Lima 2400 EXCAVATORS, with Dragline and Forward Shovel. Choice of four.  
Marion 111M EXCAVATORS. Choice of two.  
Lima 1201 EXCAVATORS. Choice of two.  
Ruston 100B EXCAVATOR, Diesel/Electric.  
All machines in excellent condition, may be seen working, and are open to any inspection and trial. Immediate delivery.

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**SUPER LIG SERVICE**

New J.C.B. 4 Hydraulic EXCAVATOR £2,525  
New HOWARD SUPER TRENCHER, 45 stock £2,575  
PIPELAYER for same £40  
New SHAWNEE POOLE 7 cu. yd. 9.9-ton DUMPER £2,100  
J.C.B. Hydraulic EXCAVATOR and Loading Shovel £1,200  
J.C.B. Hydraulic EXCAVATOR and Loading Shovel £950  
1959 HOWARD SUPER TRENCHER, as new £1,850  
ASTELL WATTS TRENCHER on Ferguson Diesel £575  
HOWARD 31L TRENCHER, with Fordson V.O. £250  
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All Reconditioned Machines sold under guarantee.  
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10RB, 20000 Series, Skimmer and Backacter Equipment, very good condition, £2,450.

10RB, 13700 Series, Skimmer and Backacter, £1,100.

PRIESTMAN Wolf IIIB, Dragline or F/S, 1956, good working order, £1,500.

19RB, 17000 Series, Dragline or F/S, good working order, £2,650.

SMITH 21, 17600 Series, C/S or Skimmer and Backacter, 1950/51, £2,500 each.

22RB, 19000 Series, F/S, very good condition, £2,750.

NCK304, F/S Equipment, 1900 Series, very good condition, £3,400.

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33RB, 19000 Series, Backacter, good working order, £6,250.

37RB, 3000/9000 Series, Dragline, Various.

38RB, 21000 Series, Dragline or Crane, very good condition, £10,500.

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LIMA 1201, Dragline or Crane, 5000 and 32000 Series. Price on application.

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Further details: 14 Lower Grosvenor Place, London, S.W.1. VICTORIA 7531, 3501, 8080, 8886 (15 lines).

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**WILL PURCHASE good second-hand PLANT and ENGINEERING EQUIPMENT, including Cranes, Fork Lift Trucks, Machine Tools, etc.—Write Box P.3306, "The Contract Journal."**

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30/- PER WEEK

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10 CWTs. to 10 TONS

with or without drivers

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CAT. D.7's Dozer or Scraper

19 R.B.'s—any equipment

HOUNSLOW 8831

## FOR HIRE CHESHIRE HIGHWAY EARTH BORING MACHINE

Available with 9", 12", 14", and 24" augers ready to travel to all parts of the country at any time

ACWORTH (PLANT HIRE) LTD.

WALTHAM CROSS 26211/6

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Delmag Diesel PILE HAMMERS, DS, D12 and D22.  
G17T Delmag PILE FRAME, with Turntable.  
KL44 MOBILE CRANES, Jibs up to 50ft., pneumatics or tracks.

Neals NM 2-ton MOBILE CRANES, 30ft./35ft. Jibs. Johnson 1 cu. yd. and 1 1/2 cu. yd. Diesel DUMPER. Zenith DIE EXTRACTORS, Nos. 20 and 80.

20-ton PORTAISOLO.

McKiernan-Terry PILING HAMMERS, 5, 6, 7 and 9B3.

Ruston Diesel LOCOMOTIVES, 2ft. gauge, 25/30-h.p. 10/7 Winget CONCRETE MIXERS, Diesel.

2in. and 4in. CENTRIFUGAL PUMPS.

STEEL SHEET PILES, Sections 1 and No. 2 and No. 3, various lengths.

Spencer-Hopwood BOILERS, all sizes.

22RB, with Dragline and 70ft. Crane Equipment.

300 12ft. and 16ft. TRENCH SHEETS.

DUDLEY VALE, LTD.,

3 Buckingham Place, London, S.W.1. VICTORIA 0252.

**ROAD ROLLERS, all Diesels.—Aveling-Barford GC**

7/8-ton, 1952, Ruston 2-cyl. engine, Price 1-time Scarifier, Cab, Sprayers, GD 10-ton, 1948, Ruston

3-cyl. engine, Price 2-time Scarifier, Awning, Sprayers, GB 3-ton, 1949, Ruston 2-cyl. engine, Awning,

Sprayers, MD8, Lister 3-cyl. engine, Price 2-time Scarifier, Awning, Sprayers, AO 50/50cwt., Ruston

2-cyl. Engine, Sprayers, Fowler 8/10-ton, 2-time Scarifier, Awning, Sprayers.—A. M. COLE, Eastgate, Sleaford, Lincs. Tel. 463.

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DOZERS: CRANES: ROAD ROLLERS: FLOOR CENTRES: ACROW PROPS: PAINT SPRAYERS:

MOBILE SITE OFFICES: PUMPS: HOISTS: 8/15cwt.; ROADROLLERS, 5in. to 10in. Light and Heavy

Section. All CONTRACTORS' PLANT, long or short HIRE — 2 Burtons Road, Hampton Hill, Middx.

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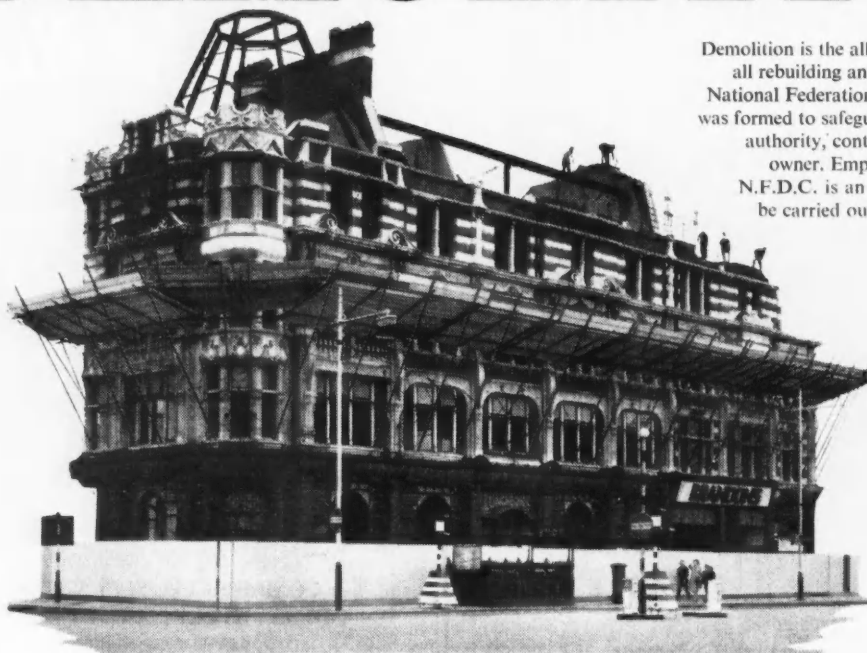


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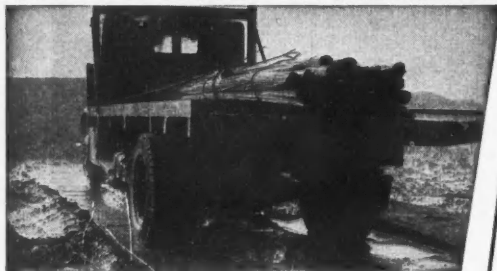
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To overcome anomalies which arise when Standard Forms of Contract unrelated to Demolition projects are considered, the Federation has issued a form of Contract specifically drawn for Demolition work, likewise a schedule of day work charges. In addition the Working Rule Agreement with the N.F.B.T.O. has been reviewed and brought up to date. Copies of all documents are available on application to the Secretary.

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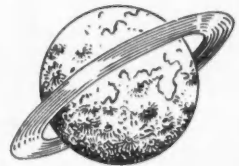
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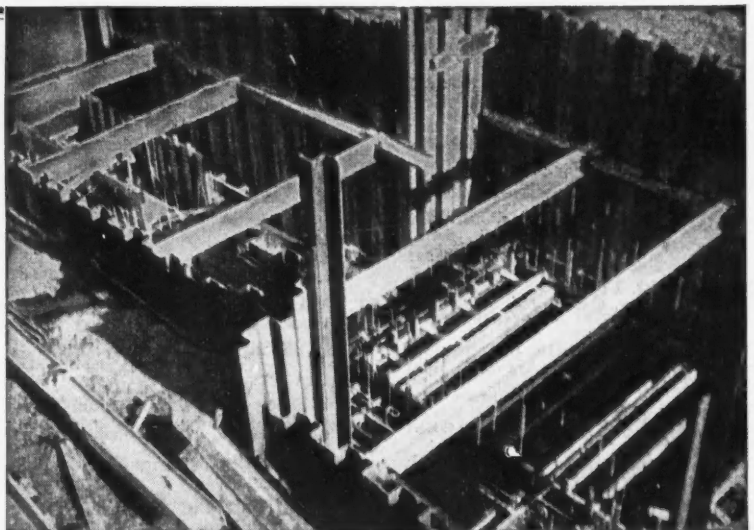
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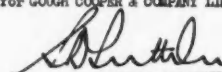
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  - (21) Heating and Planning.
  - (22) Supply and Delivery of Ready-mixed Concrete and Lean-mix Concrete.
  - (23) Supply and Supply and Laying of Hot Rolled Gravel Asphalt and Sand Carpets.
  - (24) Supply and Delivery of Salt Glazed Ware Pipes, Drain Fittings, Concrete Cylindrical Pipes and Fittings, and Concrete Porous Pipes.
  - (25) Supply, Deliver and Lay Dense Tar Surfacing.

Forms of Tender may be obtained from the County Surveyor, County Hall, March, Cambs.

Sealed Tenders, in envelope provided, to be received by the Clerk of the County Council by Noon on MONDAY, 23rd January, 1961.

R. THURLOW,  
Clerk of the County Council.

County Hall,  
March,  
December, 1960.

## BOROUGH OF HESTON AND ISLEWORTH.

TENDERS are invited for the SUPPLY and DELIVERY of the FOLLOWING:

- (a) Tractor.
  - (b) Trailer.
  - (c) Gang Mowers.
- Further particulars and Conditions of Contract obtainable from the Parks Superintendent, Parks Office, The Hedges, Lampton Road, Hounslow, Middx. Tenders, complete with illustrations, Specifications, Prices, etc., enclosed in a sealed envelope endorsed "Tender for —" (as applicable), not indicating the sender, must reach me by 10 a.m., 23rd JANUARY, 1961.

The Council are not bound to accept any Tender.  
D. MATHIESON,  
Town Clerk.

Town Hall,  
Hounslow, Middx.

## BOROUGH OF HENDON.

The Borough Council invites SEPARATE FIXED-PRICE TENDERS for the PROVISION of NEW KITCHENS and other BUILDING WORKS at the FOLLOWING COUNTY PRIMARY SCHOOLS:—

- (1) Church Hill, N.W.2.
- (2) The Hyde, N.W.9.
- (3) Colindale, N.W.9.
- (4) Edgware, Middlesex.

In each case the Form and Conditions of Tender, and Bills of Quantities will be issued by, and Plans may be inspected at the offices of, the Borough Engineer and Surveyor, to whom applications for the documents must be made, stating for which of the above it is desired to Tender, not later than 12th January, 1961. Bills of Quantities will be available for issue on or about the 16th January. Applications in respect of any or all of the above projects must be accompanied by a deposit of £2.2s., which will be returned on receipt of a bona-fide Tender on the form provided, and not subsequently withdrawn. Cheques should be made payable to Hendon Corporation. Tenders must be received by the 30th JANUARY, 1961.

This invitation to Tender is subject to certain terms and conditions, particulars of which will be forwarded to each tenderer.

R. H. WILLIAMS,  
Town Clerk.

Town Hall,  
Hendon,  
N.W.4.

## BARNET URBAN DISTRICT COUNCIL.

## BARNET GATE LANE—SOIL AND SURFACE WATER SEWERS.

The Council invites TENDERS for the LAYING of approx. 3,200 lin. yd. of STONEWARE PIPE SOIL AND SURFACE WATER SEWER of 6in., 9in. and 12in. dia., certain lengths of which will be laid with two pipes in one trench, together with Precast Concrete Manholes and other ancillary works.

Conditions of Contract and Drawings may be inspected, and Specification of Work, Bill of Quantities and Form of Tender obtained, on application to the Engineer and Surveyor of the Council, Ravenscroft House, Wood Street, Barnet, on any day (Saturdays excepted) between the hours of 9 a.m. and 5 p.m.

Sealed Tenders must be delivered to the undersigned not later than 12 Noon on WEDNESDAY, the 18th January, and marked in the top left-hand corner of the envelope "Barnet Gate Lane—Soil and Surface Water Sewers."

The Council does not bind itself to accept the lowest or any Tender.

ALFRED S. MAYES,  
Clerk of the Council.

Municipal Offices,  
Wood Street,  
Barnet, Herts.  
16th December, 1960.

## CONTRACTS

## BOROUGH OF RICHMOND (SURREY).

## ANNUAL MAINTENANCE CONTRACTS.

TENDERS are invited for the FOLLOWING CONTRACTS for the period 1st April, 1961, to 31st March, 1962:—

- (a) Maintenance of Highways—Carriageways.
- (b) Maintenance of Highways—Footways.
- (c) Maintenance of Highways—Heating and Planning.
- (d) Laying Plastic White Lines.

Contract documents can be obtained from the Borough Engineer and Surveyor, King's Road, Richmond, Surrey, on application, stating which is required.

Tenders, in the plain sealed envelope provided and endorsed "Tender for Highways Maintenance Contract," must be delivered to me not later than 12 Noon on SATURDAY, 21st January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

CLIFFORD HEYWORTH,  
Town Clerk.

Town Hall,  
Richmond,  
Surrey.

## CITY OF CAMBRIDGE.

## LAMMAS LAND PADDLING POOL.

## COLDHAM'S COMMON SWIMMING POOL.

FIXED-PRICE TENDERS are invited for ONE or BOTH of the FOLLOWING CONTRACTS:—

- (1) Lammas Land Paddling Pool.—Erection of a Purification Plant House and a Small Sewage Pumping Station of approx. 600 sq. ft. plan area, and ancillary pipework.
- (2) Coldham's Common Swimming Pool.—Erection of a Purification Plant House of approx. 1,100 sq. ft. in floor area; Modification to the Pool, and ancillary work.

Forms of Tender, Specifications and Contract documents may be obtained from the City Engineer and Surveyor, The Guildhall, Cambridge, on payment of a deposit of Two Guineas for each Contract, which will be refunded on receipt of a bona-fide Tender.

All documents must be submitted by 5 p.m., WEDNESDAY, 25th January, 1961.

The Council is not bound to accept the lowest or any Tender.

ALAN H. I. SWIFT,  
Town Clerk.

The Guildhall,  
Cambridge.

## CARSHALTON URBAN DISTRICT COUNCIL.

## FELLOWS ROAD DEPOT—SURFACING OF ROADS.

TENDERS are invited for the SURFACING of SERVICE ROAD at the ABOVE DEPOT on existing Hardcore Foundation, entailing the Laying of approximately 2,650 sq. yd. of Macadam Surfacing and the Construction of approximately 560 sq. yd. of Concrete Hardstanding.

Form of Tender, Specification and Bill of Quantities may be obtained from, and the Drawing and Conditions of Contract inspected at, the office of the Engineer and Surveyor, Stone Court, The Grove, Carshalton, Surrey.

No Tender will be accepted unless in a plain sealed envelope addressed to the Chairman of the Council at these offices, and delivered not later than 12 Noon on WEDNESDAY, 25th January, 1961. The Tender must be endorsed "Fellows Road Depot—Surfacing of Roads," but must not bear any name or mark indicating the sender.

The Council do not bind themselves to accept the lowest or any Tender.

C. H. DURRANT,  
Clerk of the Council.

District Council Offices,  
The Grove,  
Carshalton,  
Surrey.

## MIDHURST RURAL DISTRICT COUNCIL.

## CONSTRUCTION OF CAR PARK AND SEWER—GRANGE ROAD, MIDHURST.

TENDERS are invited on a fixed-price basis for the CONSTRUCTION of 2,250 sq. yd. of CAR PARK, ACCESS ROADS and FOOTWAYS, together with ancillary works, and approx. 270 lin. yd. of 9in. dia. ASBESTOS-CEMENT SEWER at GRANGE ROAD, Midhurst.

General Conditions, Specifications, Bills of Quantities, Drawings and Form of Tender may be obtained from the Engineer and Surveyor, Council Offices, Midhurst, upon the payment of £2.2s. deposit, which will be refunded on receipt of a bona-fide Tender. Tenders must be enclosed in a plain sealed envelope, endorsed "Car Park and Sewer—Grange Road," and be delivered to the undersigned by 31st JANUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

D. L. BLAY,  
Clerk of the Council.

Council Offices,  
North Street,  
Midhurst, Sussex.

## CHELMSFORD RURAL DISTRICT COUNCIL.

## DANBURY AND OTHER PARISHES SEWERAGE SCHEME.

## BOREHAM SECTION—STAGE I.

## CONTRACT NO. 1.

The Council invites FIXED-PRICE TENDERS for the ABOVE CONTRACT, comprising about 775 yd. of 7in. and 9in. dia. Gazed Stoneware Sewers, 3,500 yd. of 10in. dia. Bitumen Sheathed Spun-iron Rising Main, and a Main Sewage Pumping Station in Reinforced Concrete with Brick Superstructure, and other ancillary works.

Drawings may be inspected at the Offices of the Consulting Engineers, MESSRS. LEMON AND BLIZZARD, 59 Tufton Street, Westminster, S.W.1, and at the Engineer and Surveyor's Office, London Road, Chelmsford.

Contract documents may be obtained on or after SATURDAY, 14th January, 1961, by the Consulting Engineers on payment of a deposit of £5 by cheque made payable to the Chelmsford Rural District Council. The deposit cheque will be returned on receipt of a bona-fide Tender which is not subsequently withdrawn.

Tenders, together with the Bill of Quantities fully priced in ink, and to be returned in the undersigned, in a sealed envelope bearing no mark or indication of the sender, not later than Noon on TUESDAY, 7th February, 1961.

The Council does not undertake to accept the lowest or any Tender.

C. A. BOHANNON,  
Clerk of the Council.

Council Offices,  
London Road,  
Chelmsford, Essex.

## CONTRACTS

## COUNTY BOROUGH OF WIGAN.

## ANNUAL TENDERS FOR MATERIALS, 1961-62.

TENDERS are invited for the SUPPLY of the UNDERMENTIONED MATERIALS during the financial year ending 31st March, 1962:—

- (1) Granite Chippings.
- (2) Aggregate for Concrete and Building Work.
- (3) Pitching Stone.
- (4) Tar and Bituminous Compounds for Surface Dressing—Supplied and/or Applied.
- (5) Coated Macadam.
- (6) Cold Asphalt, 1961.
- (7) Dense Macadam Surfacing Materials and Precast Chippings.
- (8) Concrete Flags and Kerbs.
- (9) Stone Kerbs.
- (10) Ashes.
- (11) Glazed Earthenware Pipes and Fittings.
- (12) Concrete Pipes, Manholes and Gully Pots.
- (13) Gully Grates and Frames.
- (14) Manhole Covers and Frames.
- (15) Cement.
- (16) Fabric Reinforcement.

Forms of Tender, etc., may be obtained upon application to the Borough Engineer, Municipal Buildings, Library Street, Wigan.

Tenders, in the envelopes provided, must be received by the undersigned not later than 10 a.m. on MONDAY, the 6th of February, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender, and attention is drawn to the Council's Standing Orders, a copy of which can be seen at the Borough Engineer's Office.

ALLAN ROYLE,  
Town Clerk.

Municipal Buildings,  
Library Street,  
Wigan.

## BOROUGH OF CHELTENHAM.

## HAYDEN SEWAGE DISPOSAL WORKS EXTENSIONS. STAGE 2.

TENDERS are invited from experienced contractors for the CONSTRUCTION in PRESTRESSED and NORMALLY REINFORCED CONCRETE of Three Sludge Bed Units, Eight 46ft. dia. Percolating Filters, Two 65ft. dia. Humus Tanks, Primary and Secondary Sludge Digestion Tanks, 60ft. dia. Sludge Liquor Pumping Station and Gasholder Raft, together with an Administration Building, Heater House, Roadworks, and ancillary works, and general attendance upon contractors supplying machinery and equipment to be installed therein.

Specifications and Bills of Quantities may be obtained from the undersigned on payment of a deposit of £15 15s. (Fifteen Guineas) which will be refunded on receipt of a bona-fide Tender not subsequently withdrawn. A set of Bills may be purchased on payment of a further £5 5s. (Five Guineas) which will not be refunded.

Drawings may be inspected at the Offices of the undersigned during normal working hours.

Tenders, together with fully priced Bills of Quantities, in plain sealed wrappings endorsed "Tender for Hayden Sewage Disposal Works Extensions, Stage 2," but without any mark or indication of the sender, are to be delivered to the Town Clerk, P.O. Box No. 12, Municipal Offices, Cheltenham, not later than 11 a.m. on 13th February, 1961.

The Council does not bind itself to accept the lowest or any Tender.

W. E. C. BIRD, A.M.I.C.E., M.I.Mun.E.,  
Borough and Water Engineer.

Municipal Offices,  
Cheltenham.

## COSELEY URBAN DISTRICT COUNCIL.

## ANCHOR ROAD GARAGE WORKSHOP.

TENDERS are invited from competent contractors for the ERECTION of a STEEL-FRAMED STRUCTURE to match the existing garage, approx. size 48ft. x 30ft., together with ancillary works. Specification, Plans, Form of Tender may be obtained from the undersigned on deposit of Two Guineas which will be refunded on receipt of a bona-fide Tender not subsequently withdrawn, and the return of all documents.

Tenders, in plain sealed envelopes endorsed "Proposed Workshop—Anchor Road Garage," bearing no mark or indication as to the sender, should reach me not later than First Post on 14th JANUARY, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

JOSEPH C. ROPER,  
Clerk of the Council.

Council House,  
Coseley.

## WEST CORNWALL WATER BOARD.

## DRIFT WATER SCHEME.

## CONTRACT NO. 7—PIPELAYING.

The Board invite FIXED-PRICE TENDERS from experienced contractors for the FOLLOWING WORK:—

CONTRACT NO. 7.—Supplying, Excavating for, Laying, Jointing, Maintenance, and ancillary works, for about 15 miles of Spun-iron Mains with Flexible Joints, including all Valves and Fittings, as follows:

Section A:	
About 970 yd. of 12in. dia.	
About 10,140 yd. of 10in. dia.	
About 2,380 yd. of 8in. dia.	
About 695 yd. of 6in. dia.	
About 370 yd. of 4in. dia.	
About 330 yd. of 3in. dia.	

Section B:	
About 2,315 yd. of 6in. dia.	
About 7,405 yd. of 4in. dia.	
About 1,865 yd. of 3in. dia.	

The General Conditions, Specification, Bill of Quantities and Form of Tender for this Contract, prepared by the Engineers, HERBERT LAPWORTH PARTNERS, 25 Victoria Street, Westminster, S.W.1, may be obtained from the undersigned on or after WEDNESDAY, the 11th January, 1961, on receipt of a cheque for £5, made payable to the West Cornwall Water Board, which sum will be returned on receipt of a bona-fide Tender.

Tenders, together with all documents received, are to be enclosed in a sealed cover endorsed "Drift Water Scheme—Tender for Contract No. 7—Pipelaying" (Section A and B separately), and addressed to the undersigned and delivered not later than 10 a.m. on MONDAY, 30th January, 1961.

Only Tenders from firms experienced in this type of work will be considered.

The Board do not bind themselves to accept the lowest or any Tender, and reserve the right to accept separate Tenders for Section A or B, or one Tender in respect of the whole of the work.

E. O. WHEALE,  
Clerk to the Board.

Municipal Buildings,  
Penzance,  
Cornwall.  
16th December, 1960.



## CONTRACTS

COUNTY BOROUGH OF DARLINGTON.  
COLLEGE OF FURTHER EDUCATION—  
PHASES 2 AND 3.

TENDERS are invited for the ERECTION of a FOUR-STORY STEEL-FRAMED BUILDING containing approx. 74,000 sq. ft. of Laboratories, Classrooms, Assembly and Dining Halls.

Full particulars may be obtained from the Borough Architect, Central Buildings, Darlington, upon payment of £2 2s, which will be refunded after receipt of bona-fide Tender. Bills of Quantities will be available on 16th January, 1961.

Tenders, on the official Form of Tender and enclosed in the envelope provided, to be returned to the Town Clerk, Houghton, not later than 12 Noon, 16th FEBRUARY, 1961.

C. N. S. NICHOLSON,  
Town Clerk.

## BOROUGH OF CHELTENHAM.

## ANNUAL STORES TENDERS.

TENDERS are invited for the SUPPLY of the FOLLOWING during the 12 months ending 31st March, 1962:—

- | Tender Form | Item                             |
|-------------|----------------------------------|
| (1)         | Castings.                        |
| (2)         | Concrete Flags.                  |
| (3)         | Disinfectant.                    |
| (4)         | Drawing Office Materials.        |
| (5)         | Hire of Motor Transport.         |
| (6)         | Household Goods, etc.            |
| (7)         | Ironmongery.                     |
| (8)         | Lead Pipe, Fittings, etc.        |
| (9)         | Lime, Bricks, Sand, etc.         |
| (10)        | Portland Cement.                 |
| (11)        | Printing and Stationery.         |
| (12)        | Road Materials.                  |
| (13)        | Stoneware Pipes, etc.            |
| (14)        | Tools.                           |
| (15)        | Miscellaneous Oils, Glass, etc.  |
| (16)        | Zinc and Pipes.                  |
| (17)        | Petrol, Oils and Grease.         |
| (18)        | Protective and Uniform Clothing. |

Tender Forms (single copies only) may be obtained by sending an addressed envelope or label to the undersigned.

Sealed Tenders, in the addressed envelope which will be provided, must be received by the Town Clerk not later than the 14th JANUARY, 1961.

The lowest or any Tender will not necessarily be accepted.

W. E. C. BIRD, A.M.I.C.E.,  
Borough and Water Engineer.

Municipal Offices,  
P.O. Box No. 12,  
Cheltenham,  
7th December, 1960.

## BOROUGH OF BILSTON.

## CONTRACT NO. 248.

RECONSTRUCTION OF STORMWATER SEWER AT  
LAVENDER GROVE, BILSTON.

TENDERS are invited from public works contractors for the ABOVE CONTRACT, which includes the Laying of approx. 200 lin. vd. of 18in. dia. Concrete Pipes, together with Precast Concrete Manholes, and ancillary works.

Drawings may be inspected at the Office of the Borough Engineer, Municipal Buildings, Hall Street, Bilston, Staffs., from whom Tender documents may be obtained upon payment of a deposit of Two Guineas, which sum will be refunded upon receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, in plain sealed envelopes endorsed "Contract No. 248—Lavender Grove—Stormwater Sewer," are to be delivered to the undersigned not later than 12 Noon on TUESDAY, the 10th January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

A. M. WILLIAMS,  
Town Clerk.

Town Hall,  
Bilston, Staffs.,  
December, 1960.

## BOROUGH OF BILSTON.

## CONTRACT NO. 247.

BRADLEY LANE SOUTH HOUSING SITE  
EXTENSION.

## INITIAL SITE LEVELLING WORKS.

TENDERS are invited for the ABOVE WORKS, which comprise of 233,000 cu. yd. of Bulk Excavation and Site Levelling 48 acres, together with Land Drainage and other ancillary works.

The Specification, Bills of Quantities and Form of Tender may be obtained from, and the Drawings inspected at, the Office of the Borough Engineer, Municipal Buildings, Hall Street, Bilston, Staffs., upon payment of a deposit of Two Guineas, which will be refunded upon receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, in plain sealed envelopes endorsed "Contract No. 247—Bradley Lane South Housing Site Extension—Initial Site Levelling Works," must be delivered to the undersigned not later than 12 Noon on TUESDAY, the 10th January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

A. M. WILLIAMS,  
Town Clerk.

Town Hall,  
Bilston, Staffs.,  
December, 1960.

CARSHALTON URBAN DISTRICT  
COUNCIL.

TENDERS are invited for the SUPPLY of the UNDERMENTIONED during the year ending 31st March, 1961:—

- (1) Artificial Stone Paving (A.T.10).
- (2) Precast Concrete Kerb (A.T.11).
- (3) Execution of Miscellaneous Highway Works (A.T.13).

Particulars and Forms of Tender may be obtained from the Engineer and Surveyor, Stone Court, The Grove, Carshalton.

No Tender will be accepted unless in a plain sealed envelope addressed to the Chairman of the Council, at these Offices and delivered not later than MONDAY, 23rd January, 1961.

The envelope must be endorsed "Tender for Road Materials, etc." but must not bear any name or mark indicating the sender.

The Council do not bind themselves to accept the lowest or any Tender.

C. H. DURRANT,  
Clerk of the Council.

District Council Offices,  
The Grove,  
Carshalton,  
Surrey,  
December, 1960.

## CONTRACTS

## SURREY COUNTY COUNCIL.

## HIGHWAYS AND BRIDGES DEPARTMENT.

TENDERS are invited for the SUPPLY of the UNDERMENTIONED MATERIALS and SERVICES for 12 months commencing 1st April, 1961:—

- | No.  | Materials and Services  |
|------|---|
| (1)  | Cement.   |
| (2)  | Refined Tar.  |
| (3)  | Bitumen.  |
| (4)  | Bitumen Emulsions.  |
| (5)  | Broken Granite.   |
| (6)  | Broken Limestone.   |
| (7)  | Crushed Slag for Tar and Bitumen Macadam.                                   |
| (8)  | Concrete Pipes and Gullies.   |
| (9)  | Precast Concrete Kerb and Edgings.  |
| (10) | Coarse, Fine and All-in Aggregate for Concrete, Purposes and Gritting Sand. |
| (11) | Shingle for Surface Dressing Purposes.                                      |
| (12) | Tar and Bitumen Macadam and Gravel and Cold Asphalt.                        |
| (13) | Filler.   |
| (14) | Brooms (Bahia and Plastic).   |
| (15) | Mechanical Haulage.   |
| (16) | Lean-mix and Ready Mixed Concrete.  |
| (17) | Traffic Signs and Road Danger Lamps.  |
| (18) | Plastic White.  |
| (19) | Surfacing Carriageways with Filled Bitumen and Dry Stone Chippings.         |
| (20) | Hedge Trimming and Grass Cutting (Guildford and Bagshot Rural Districts).   |
| (21) | Heating and Planing Road Surfaces.  |
| (22) | Fixing Catseye Reflecting Studs.  |
- Forms of Tender, General Conditions and Specification obtainable from County Engineer and returnable by 21st JANUARY, 1961, to CLERK OF THE COUNTY COUNCIL, County Hall, Kingston-upon-Thames. No Tender will be received except in a plain sealed envelope bearing the words "Tender for —" Applications for documents must state the serial number of the forms required.

## BOROUGH OF POOLE.

COAST PROTECTION WORK—SHORE ROAD TO  
ST. ANN'S.

The Council invite TENDERS for the CONSTRUCTION of 540 lin. R. of SEA WALL (approximately 2,000 cu. yd. of concrete, with Steel Piled Toe (approximately 4,000 sq. ft. Piling), Promenade, Cliff Works, and Retaining Walls.

Contract documents from Borough Engineer after 6th January, 1961, on deposit of Two Guineas. Tenders to me by 30th JANUARY, 1961.

J. G. HILLIER,  
Town Clerk.

December, 1960.

## STOKE-ON-TRENT CORPORATION.

## TENDERS FOR STORES.

The Corporation invites TENDERS for the SUPPLY of the UNDERMENTIONED MATERIALS FOR 12 months ending 31st March, 1962:—

- |     |  |
|-----|--|
| (A) | Port and Cement.   |
| (B) | Bricks.  |
| (C) | Stoneware Pipes and Gullies.                                     |
| (D) | Concrete Kerbs and Flags.  |
| (E) | Granite Macadam and Chippings.                                   |
| (F) | Limestone Macadam and Chippings.                                 |
| (G) | Furnace Slag and Chippings.                                      |
| (H) | Asphalt.   |
| (I) | Sand and Gravel.   |
| (J) | Pitch.   |
| (K) | Cresote Oil and Bituminous Compounds.                            |
| (L) | Cast-iron Work.  |
| (M) | Ready-Mixed Concrete.  |
| (N) | Picks, Shovels and General Ironware.                             |
| (O) | Oils, Greases and Petroleum.                                     |
| (P) | Petrol.  |
| (Q) | Soap, Soda, etc.   |
| (R) | Brooms and Brushes.  |
| (S) | Bath Towels, Dusters, etc.                                       |
| (T) | General Stores.  |
| (U) | Disinfectants.   |
| (V) | Electric Lamps and Fluorescent Tubes.                            |
| (W) | Coal and Slack.  |
| (X) | Protective clothing (Overalls, Donkey jackets and Rubber Boots). |
| (Y) | Screened Gas Coke.   |
- Specifications, Conditions and Forms of Tender may be obtained on application to the City Engineer and Surveyor, Town Hall, Stoke-on-Trent, and Tenders, in plain sealed envelopes endorsed "Stores Purchase Committee—Tender for —" (followed by the subject to which it relates), must be delivered to the undersigned not later than 12 Noon, MONDAY, 30th January, 1961.

Contractors are required to conform to the Standing Orders of the Council relating to Contracts.

HARRY TAYLOR,  
Town Clerk.

## CITY OF LEICESTER.

NORTHERN AREA DEVELOPMENT—  
CONTRACTS NOS. 1 AND 2.

TENDERS are invited from contractors having experience of works of similar character and magnitude for the CARRYING OUT of the FOLLOWING:

- (1) CONTRACT NO. 1—Housing Estate Carriageways and Sewers:
  - (a) Site Clearance approx. 25 acres.
  - (b) Lean Mix Concrete Carriageways approx. 42,500 sq. yd.
  - (c) Reinforced Concrete Carriageways approx. 12,000 sq. yd.
  - (d) 9in. to 36in. dia. sewers approx. 13,500 lin. yd.; together with Manholes and other incidental works.
  - (e) Surface Water Outfall Sewer 15in. to 60in. dia. approx. 1,200 lin. yd.; together with Manholes and incidental works.

Tender documents, which may be obtained on payment of Two Guineas, refundable on receipt of a bona-fide Tender, are to be returned in the official envelope endorsed "Northern Area Development—Contract No. 1," by 4.30 p.m. on MONDAY, 30th January, 1961.

(2) CONTRACT NO. 2—Flood Relief Works: Improvement to approx. ¾ mile of existing Brook and the Construction of 800 yd. of New Channel, together with approx. 1,000ft. of Reinforced Concrete Culvert and 4,000ft. of 8in. dia. Pipe.

Tender documents, which may be obtained on payment of Two Guineas, refundable on receipt of a bona-fide Tender, are to be returned in the official envelope endorsed "Northern Area Development—Contract No. 2," by 4.30 p.m. on MONDAY, 6th February, 1961.

Full details and the Tender documents for both the above Contracts are available from the undersigned.

JOHN L. BECKETT, M.I.C.E.,  
City Surveyor.

Town Hall,  
Leicester.

## CONTRACTS

## STAFFORDSHIRE COUNTY COUNCIL.

TENDERS are invited for the CONSTRUCTION of DUAL CARRIAGEWAYS on a Section of the WINCHESTER-PRESTON TRUNK ROAD, A.34 (Stafford-Stoke), from M.P. "Stone 2½" to Strongford Bridge.

The Contract involves various Accommodation Works, Fencing, Walling, Earthmoving, Diversions of the River Trent, Drainage, Kerbing, Carriageway Construction in Cement-bound Granular Base 10in. thick, Surfacing mainly in Hot Rolled Asphalt, and the Construction of Three Reinforced Concrete Bridges, two of three spans totalling respectively 105ft. and 90ft. and one single span of 20ft.

Copies of the Specification and Bill of Quantities may be obtained from the undersigned on payment of a deposit of £5 which will be refunded on receipt of a bona-fide Tender or on return of the documents before the closing date. Drawings may be inspected at the County Surveyor's Office, Stafford.

Tenders, endorsed "Stafford-Stoke Road, A.34," and bearing no indication of the name of the sender, should be received by the undersigned not later than 12 Noon on THURSDAY, 2nd February, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

T. H. EVANS,  
Clerk of the County Council.

County Buildings,  
Stafford.

December, 1960.

## COUNTY BOROUGH OF DONCASTER.

## ANNUAL TENDERS FOR SUPPLIES.

TENDERS are invited for the SUPPLY of the FOLLOWING ITEMS for the year ending 31st March, 1962:—

- (1) Dry Stone for Surface Dressing and Gritting.
- (2) Dry Stone for Road Foundations.
- (3) Aggregates for Concrete and Building Work.
- (4) Coated Macadam.
- (5) Cold Asphalt.
- (6) Tar and Bituminous Emulsions.
- (7) Concrete Kerbs and Flags.
- (8) Ashes.
- (9) Glazed Earthenware Pipes and Gullies.
- (10) Concrete Tubes and Gullies.
- (11) Manhole Covers, Frames and Gully Grates.
- (12) Petrol, Oils, Greases and Fuel Oils.
- (13) Electric Lamps.
- (14) Brooms, Brushes and Refilling Sweeper Brushes.
- (15) Soaps and Scouring Powders.
- (16) Disinfectant.
- (17) Toilet Rolls.
- (18) Rubber and Thermoplastic Insulated Cables and Cords.

Applications for Forms of Tender and Conditions of Contract to be made to the Borough Surveyor, 2 Priory Place, Doncaster, to whom completed Tenders must be returned by FRIDAY, 27th January, 1961, in the official envelope provided.

The Council does not bind itself to accept the lowest or any Tender.

H. R. WORMALD,  
Town Clerk.

## BOROUGH OF BARKING.

BOROUGH ENGINEER AND  
SURVEYOR'S DEPARTMENT.SUPPLIES FOR THE PERIOD 1ST APRIL, 1961—  
31ST MARCH, 1962.

TENDERS are invited for the FOLLOWING:—

- Adhesives.
- Ballast, Sand and Shingle.
- Lime and Cements.
- Ready Mixed Concrete and Paving Mortar.
- Salt Glazed Ware.
- Cold Asphalt Carpeting Material.
- Cold Bitumen Emulsion.
- Cutback Bitumen, Spraying Grade.
- Granite Chippings.
- Hot Rolled Asphalt (Supply only).
- Tarred and Bituminous Macadam.
- Dustbins.
- Vehicle Batteries.
- Cleaning Materials, including Toilet Paper and Brooms and Brushes.
- Petrol, Paraffin, Gas and Diesel Oils.
- Fuel Oils (35 sec and 200 sec).
- Uniforms and Protective Clothing.
- Blacksmiths' Work (Tool Sharpening).
- Hot Rolled Asphalt (Patching).
- Motor Haulage.
- Reinstatement of Trenches and other Paving Work.
- Tar Bitumen Compound, Sprayed.
- Thermoplastic White Lines.
- Typewriter Servicing.
- Tyres and Tubes.

Particulars and Forms of Tender may be obtained upon application to the Borough Engineer and Surveyor, Town Hall, Barking, Essex. The closing date for the receipt of Tenders is 9 a.m. on FRIDAY, the 27th January, 1961.

E. R. FARR,  
Town Clerk.

Town Hall,  
Barking, Essex.

## BOROUGH OF WATFORD.

CONTRACTS FOR SUPPLIES OF MATERIALS  
AND SERVICES.

The CORPORATION invites TENDERS for the SUPPLY and DELIVERY of the UNDERMENTIONED MATERIALS and SERVICES for the 21 months 1st April, 1961 to 31st December, 1962:—

- Cement.
- Gravel, Sand and Ballast.
- Tar and Bitumen Macadam, Cold Asphalt.
- Tar for Surface Dressing.
- Concrete Paving Slabs and Kerbs, Basalt Chippings.

- Paint.
- Wallpaper.
- Protective Clothing.
- Sweeping Machine Brush Refilling.
- Manhole Covers and Frames, Gully Gratings and Frames.
- Window Cleaning.
- Electric Lamps and Tubes.
- Toilet Rolls.
- Petrol and Diesel Oil.
- Paraffin and T.V.O.
- Fuel Oil.
- Dustbins.
- Trench Reinstatements.
- Salvaged Paper.

Tender documents obtainable from the Borough Engineer, Town Hall, Watford, on stating materials or services for which they are required.

No Tender will be considered unless upon the official forms, which must be sent to the undersigned, in the envelope provided for the purpose, by 2 p.m. on 1st FEBRUARY, 1961.

GORDON H. HALL,  
Town Clerk.

Town Hall,  
Watford.

## CONTRACTS

## INDUS BASIN PROJECT.

WEST PAKISTAN WATER AND POWER  
DEVELOPMENT AUTHORITY.

ADVANCE NOTICE OF INTENT TO INVITE TENDERS  
FOR THE CONSTRUCTION OF CANALS AND  
APPURTENANT WORKS.

The above Authority plans to undertake the CONSTRUCTION of a number of large CANALS in WEST PAKISTAN. Their construction will be financed through the Indus Basin Development Fund, the operation of which will be administered by the International Bank for Reconstruction and Development (World Bank). The canals, which form a part of the works embodied in the Indus Basin Settlement Plan, will have a total length of about 390 miles, and involve approx. 345 million cu. yd. of excavation, as well as the construction of several hundred bridges and other canal structures.

The work will be divided into seven or more individual projects, the first of which to be undertaken will be the Trimmu-Sidhnai Link Canal. This canal will extend from Trimmu on the Chenab River to near Sidhnai on the Ravi River, and have a total length of 44 miles. It will have a capacity of 11,000 cu. ft. per second, and involve 20 million cu. yd. of excavation, the construction of several regulators, bridges, aqueducts and other structures. The second project will be the Sidhnai-Mailsi-Bahawal Link Canal. This canal will extend from a point near Sidhnai on the Ravi River to the Sutlej River near the town of Mailsi, and from that river on to the Bahawal Canal. It will have a capacity of 10,100 cu. ft. per second, which capacity is reduced at intervals along its length to 3,900 cu. ft. per second at its terminus. The total length of the link is 69 miles, and its construction will involve about 30 million cu. yd. of excavation, several regulators, bridges, aqueducts, siphons and other structures.

The Authority plans to call for Tenders for the construction of all or a portion of the Trimmu-Sidhnai Link early in 1961, and for the construction of the Sidhnai-Mailsi-Bahawal Link about mid-year 1961. Only contractors who have been prequalified by the Authority will be invited to submit Tenders. For this purpose, contractors who wish their names to be included on a list to receive the Document for Pre-qualification are requested to submit the following information to the Authority's Consultants, TIPTON AND KALMBACH, INC., at Post Office Box 589, Lahore, West Pakistan, with a copy to their Office at 831 14th Street, Denver, 2, Colorado, U.S.A.:

- (1) Name of company or firm.
- (2) Country of domicile.
- (3) Full address, name and title of person to whom future correspondence should be directed.

The above information should be sent airmail to reach the Office of the Authority's Consultants on or before 16th JANUARY, 1961. At that time interested contractors will be furnished with a document describing the work and setting forth the information required from them by the Authority in order to evaluate their qualifications for undertaking the proposed canal construction.

PROJECT DIRECTOR (LINKS).

West Pakistan Water and Power  
Development Authority.

## BOROUGH OF ABERYSTWYTH.

CONSTRUCTION OF SEWER AT SEA VIEW PLACE.

TENDERS are invited for the CONSTRUCTION of approximately 70 lin. yd. of 6in. diameter FOUL SEWER, together with Manholes and ancillary works. Forms of Tender, Specifications and Bills of Quantities may be obtained from the Borough Surveyor and Water Engineer, Park Avenue, Aberystwyth.

Tenders, in plain sealed envelopes, must reach the undersigned not later than MONDAY, 30th January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

W. PHILIP DAVIES,  
Town Clerk.

Town Hall,  
Aberystwyth,  
16th December, 1960.

## BOROUGH OF TIPTON.

DEMOLITION OF INDUSTRIAL PREMISES  
FORMERLY KNOWN AS BRITISH WATERWAYS  
DEPOT, AT JUNCTION OF OCKER HILL ROAD  
AND SPRING STREET, TIPTON.

TENDERS are invited for the DEMOLITION of INDUSTRIAL BUILDINGS and CHIMNEY STACK at the ABOVE.

Forms of Tender and Specification may be obtained from the Borough Engineer and Surveyor, Municipal Buildings, Sedgley Road West, Tipton, upon deposit of Two Guineas, to be refunded on receipt of a bona-fide Tender together with all documents. Cheques are to be made payable to Tipton Corporation.

Tenders, to be returned in the envelope provided, not bearing any name or mark to indicate the sender, and must reach the undersigned not later than First Post on FRIDAY, 13th January, 1961.

The Corporation does not bind itself to accept the lowest or any Tender.

K. W. MADIN,  
Town Clerk.

Municipal Buildings,  
Sedgley Road West,  
Tipton, Staffs.

## CITY OF CARDIFF.

CITY SURVEYOR'S DEPARTMENT.

PROPOSED STREET LIGHTING AND WEIGHTS AND  
MEASURES DEPOT—STEELWORK.

FIXED-PRICE TENDERS are invited for the SUPPLY, DELIVERY AND ERECTION OF STRUCTURAL STEELWORK for the proposed STREET LIGHTING and WEIGHTS AND MEASURES DEPOT at MILLICENT STREET.

Conditions of Tender, Specification and Drawings may be obtained from the City Surveyor, at whose office Drawings and Conditions of Contract may be inspected and to whom application should be made, accompanied by a deposit of the sum of £2 2s.

Cheques should be made payable to the Cardiff Corporation and crossed "Not Negotiable and Co."

The deposit will be refunded on receipt of a bona-fide Tender or the return of the Contract documents by the closing date.

Tenders will not be considered unless enclosed in a plain sealed envelope endorsed "Tender for Steelwork, Street Lighting and Weights and Measures Depot," addressed to the undersigned at the City Hall, Cardiff, and sent by Registered Post as to be received not later than FRIDAY, 27th January, 1961.

The envelope must not bear the name of or any mark indicating the identity of the tenderer.

The Council does not bind itself to accept the lowest or any Tender.

S. TAPPER-JONES,  
Town Clerk.

City Hall,  
Cardiff.

## CONTRACTS

## BOROUGH OF SOUTHALL

ANNUAL CONTRACTS—  
1ST APRIL, 1961-31ST MARCH, 1962.

THE COUNCIL of the Borough of Southall invite  
TENDERS for the SUPPLY of the FOLLOWING:—

- (a) Artificial Stone Paving.
- (b) Ballast and Pea Shingle.
- (c) Cleaning Materials and Drysaltery.
- (d) 3in. Granite Chippings.
- (e) Wellington Boots, Navy Blue Overall Jackets
- (f) Motor Spirit, Derv Fuel Oil, Paraffin and White Spirit.
- (g) Surface Dressing Compounds for Roads.
- (h) Dustbins.
- (i) Tarmacadam, Cold Asphalt and Tack Coat.

Forms of Tender and particulars may be obtained from the Borough Engineer and Surveyor, Town Hall, Southall, between the hours of 10 a.m. and 4 p.m. (Saturday 12 noon).

Postal applications must include a stamped addressed foolscap envelope (larger for two or more items).

Tenders, in envelope provided, bearing no indication of the sender, sealed and endorsed "Tender for —" must be delivered to the Town Clerk not later than 24th JANUARY, 1961.

The Council do not bind themselves to accept the lowest or any Tender, and may accept part or parts of any Tender.

J. S. SYRETT,  
Town Clerk.

Town Clerk's Office,  
South Road,  
Southall, Middlesex.

## CITY OF BIRMINGHAM.

TO PUBLIC WORKS CONTRACTORS.

INNER RING ROAD, SECTION 1.

HOLLOWAY CIRCUS, SEWERAGE.

The Public Works Committee invite TENDERS, on a  
FIXED-PRICE BASIS, for a MEASURE AND VALUE  
CONTRACT for the CONSTRUCTION of approximately  
370 lin. yd. of STONEWARE PIPE FOUL WATER  
SEWERS up to 24in. diameter, laid mainly in heading  
in the vicinity of SUFFOLK STREET and HORSE FAIR,  
together with incidental works.

Copies of the General Conditions (which include the Corporation's usual Fair Wages and Conditions of Labour Clause), Supplemental Conditions, Specification, Bills of Quantities and Forms of Tender, may be obtained on and after Monday, 9th January, 1961, on payment of a deposit of £2 2s. at the office of SIR HERBERT J. MANZONI, City Engineer and Surveyor, Civic Centre, Birmingham, 1, to whom all cheques should be made payable. The deposit will be returned on receipt of a bona-fide Tender. Plans can be seen at Room M.39, Civic Centre, Birmingham, 1.

Tenders, enclosed in the envelope provided for the purpose, must be sealed and delivered to the Town Clerk's Department (Room B.21), Corporation House, Birmingham, 1, not later than Noon on WEDNESDAY, 1st February, 1961, when they will be opened.

The Committee do not bind themselves to accept the lowest or any Tender.

T. H. PARKINSON,  
Town Clerk.

Council House,  
Birmingham, 1.

## BUCKLEY URBAN DISTRICT COUNCIL.

TENDERS FOR THE ERECTION OF  
HOUSES AND FLATS.

FIXED-PRICE TENDERS for the ERECTION of 12  
SEMI-DETACHED HOUSES, FOUR OLD PEOPLE'S  
DWELLINGS WITH TWO FLATS, CONSTRUCTION  
OF ROADS AND SEWERS, and the DEMOLITION OF  
EXISTING BUILDINGS at BURNTWOOD, Buckley, are  
invited.

Registered builders desirous of submitting Tenders based on Bills of Quantities must forward their names and addresses, together with a cheque for Three Guineas, made payable to the Buckley Urban District Council, which will be returned on the receipt of a bona-fide Tender not subsequently withdrawn, to R. LLOYD ROBERTS, ESQ., L.R.I.B.A., Dyffryn Chambers, Mold, not later than 14th January, 1961.

The Bills of Quantities will be despatched to the contractors who have made application by the above date on or about the 19th January, 1961. Plans, Specifications and R.I.B.A. Conditions of Contract may be seen at the office of the Architect by appointment between the hours of 10 a.m. and 4 p.m. from the 23rd January to 3rd February, 1961.

Tenders are to be delivered to the undersigned not later than 12 Noon, 6th FEBRUARY, 1961, in plain sealed envelopes endorsed "Tender for Houses."

The Council do not bind themselves to accept the lowest or any Tender.

STEVEN E. LIGO,  
Clerk of the Council.

Council Chambers,  
Buckley,  
Flintshire.

## WEST CORNWALL WATER BOARD.

HAYLE WATER SCHEME.

CONTRACT NO. 11.

PHILLACK TOWANS RESERVOIR AND PIPELAYING.

The Board invite FIXED-PRICE TENDERS from experienced contractors for the CONSTRUCTION of a CONCRETE SERVICE RESERVOIR with a capacity of 150,000 gallons at Phillack Towns, and Excavating for, Supplying, Laying, Jointing, and the Maintenance of about 1,150yd. of 6in. and 4in. dia. Asbestos-cement Pipes, together with Valves and Fittings, etc.

The reservoir is rectangular in plan, with normally reinforced concrete walls, columns and flat slab roof.

The General Conditions, Specification, Bill of Quantities and Form of Tender for this Contract, prepared by the Engineers, HERBERT LAPWORTH PARTNERS, 25 Victoria Street, Westminster, S.W.1, may be obtained from the undersigned on or after WEDNESDAY, the 11th January, 1961, on receipt of a cheque for £5, made payable to the West Cornwall Water Board, which sum will be returned on receipt of a bona-fide Tender.

Tenders, together with all documents received, are to be enclosed in a sealed cover endorsed "Hayle Water Scheme—Tender for Contract No. 11—Phillack Towns Reservoir and Piping," and addressed to the undersigned and delivered not later than 10 a.m. on MONDAY, 30th January, 1961.

Only Tenders from firms experienced in this type of work will be considered.

The Board do not bind themselves to accept the lowest or any Tender.

E. O. WHEALE,  
Clerk to the Board.

Municipal Buildings,  
Penzance,  
Cornwall.

## WORTHLEY RURAL DISTRICT COUNCIL.

## CONTRACTS

## COUNTY BOROUGH OF CROYDON.

CHAIN LINK FENCING.

TENDERS are invited for the SUPPLY and ERECTION of approximately 370 lin. yd. of CHAIN LINK FENCING and CONCRETE POSTS at THERAPIA LANE, Form of Tender obtainable from the Borough Engineer, Town Hall, Croydon.

Closing date for Tenders, 27th JANUARY, 1961.  
E. TABERNER,  
Town Clerk.

## BOROUGH OF NEWCASTLE-UNDER-LYME.

PRIVATE DEVELOPMENT HOUSING ESTATE OFF  
ROE LANE.

COMPLETION WORKS.

TENDERS are invited for the CONSTRUCTION of ROADS and FOOTPATHS on the ABOVE SITE, comprising approximately 5,600 sq. yd. of Tarmac Carriageway, 4,200 sq. yd. of Tarmac Footpath, 2,220 lin. yd. of Kerbing, and other ancillary works.

Plans may be inspected and Tender documents obtained from the office of the Borough Engineer and Surveyor, Lancaster Building, High Street, Newcastle, Staffs.

Forms of Tender and Bills of Quantities must be completed and returned to me not later than 12 Noon on MONDAY, 16th January, 1961, in a plain sealed envelope endorsed "Tender—Roe Lane Housing Estate—Completion Works."

The Council does not bind itself to accept the lowest or any Tender.

C. J. MORTON,  
Town Clerk.

## BOROUGH OF HESTON AND ISLEWORTH.

TENDERS are invited for SUPPLYING, during the  
year ending 31st March, 1962:—

- Ballast, Sand, Cement, Salt-glazed Pipes, Drysaltery Goods, etc., Haulage, Granite Chippings, Road Surface Dressing, Tinned Slag, Coke, Petrol, Diesel, Paraffin, Fuel Oil, and Workmen's Overalls.

Apply to Borough Engineer, 88 Lampton Road, Hounslow, with a stamped addressed foolscap envelope for Tender Form, Tenders, in envelopes marked "Tender—Supplies," not indicating the sender, must reach me by Noon, 17th JANUARY, 1961.

The Council are not bound to accept any Tender.

D. MATHIESON,  
Town Clerk.

Town Hall,  
Hounslow,  
Middlesex.

## CITY OF EXETER.

FROG STREET BRIDGE RECONSTRUCTION.

The City Council invite TENDERS for the RECONSTRUCTION OF FROG STREET BRIDGE, from contractors having experience of bridge construction. The bridge has a 52ft. skew span reinforced-concrete deck on mass concrete abutments, and carries the main street over the future Inner By-pass. Traffic in one direction will have to be maintained over the bridge during reconstruction, and all serving pipes and cables, etc., supported. The successful contractor will be required to complete the bridge in not more than six months, and undertake to work day and night shifts until completion.

Plans are available for inspection now, and copies may be obtained upon payment of Two Guineas, which is not returnable. On and after 9th January, Tender Form, Bill of Quantities and Specification may be obtained from the office of the undersigned on payment of Two Guineas, returnable on receipt of a bona-fide Tender.

Tenders, endorsed "Frog Street Bridge Reconstruction," must be received by the undersigned not later than 10 a.m. on TUESDAY, 31st January, 1961, in a sealed envelope bearing no name or mark indicating the sender.

Members of the Council must not be personally canvassed by or on behalf of persons tendering.

The Council do not bind themselves to accept the lowest or any Tender.

JOHN BRILEY,  
City Engineer and Surveyor.

Municipal Offices,  
7 Southernhay West,  
Exeter.

21st December, 1960.

## UTTOKETER URBAN DISTRICT COUNCIL.

WATER SUPPLY.

10IN. AND 8IN. DIA. TRUNK MAIN FROM  
ROCESTER TO UTTOKETER.

CONTRACT NO. 2.

The Council invite TENDERS from experienced public works contractors for the CONSTRUCTION of about 5,200yd. of 10in. and 8in. SPUN-IRON WATER MAINS, together with fittings and other incidental works, between Rocester and Uttoketer.

Copies of the Drawings, Conditions of Contract, Specification, Bills of Quantities and Form of Tender may be obtained from the Engineers, MESSRS. WILLCOX, RAIKES AND MARSHALL, 33 Great Charles Street, Birmingham, 3, on or after Wednesday, the 21st December, 1960, on payment to them of a deposit of Five Guineas by cheque drawn in favour of the above Council, which will be refunded on receipt of a bona-fide Tender not subsequently withdrawn, and the return of all documents.

Applicants should forward details of their recent experience in this class of work at the same time as they apply for the documents.

A Tender, on the form supplied, is to be delivered to the undersigned, in the envelope provided, not later than WEDNESDAY, the 25th January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

Dated this 19th day of December.

JOHN H. KENNY,  
Clerk of the Council.

Uttoketer U.D.C. Offices,  
The Old Bank House,  
72 High Street,  
Uttoketer, Staffs.

## WORTHLEY RURAL DISTRICT COUNCIL.

BATTERY CONCRETE GARAGES.

TENDERS are invited for the SUPPLY, DELIVERY AND ERECTION of 13 MULTIPLE GARAGES on TWO SITES at OUGHTIBRIDGE, near Sheffield.

Details of requirements may be obtained from the Engineer and Surveyor, Council Offices, Grenoside.

Tenders to be delivered to the undersigned not later than 12 Noon on THURSDAY, 26th January, 1961.

ADRIAN M. KELLY,  
Clerk of the Council.

Uttoketer U.D.C. Offices,  
The Old Bank House,  
72 High Street,  
Uttoketer, Staffs.

## CONTRACTS

## COUNTY BOROUGH OF CROYDON.

TENDERS are invited for SUPPLYING the FOLLOWING in the year commencing 1st April, 1961.—

- Granite Chippings and Dust.
  - Concrete Kerbs and Edging.
  - Tarmacadam.
  - Bituminous Macadam.
  - Tarred Kentish Ragstone.
  - Hire of Motor Vehicles.
  - Footpath Asphalt (including Laying).
  - Road Tar (including Spraying).
  - Bitumen Road Emulsion.
  - Cold Fine Asphalt and Precast Chippings.
  - Sand, Ballast and Shingle.
  - Steel Fabric Reinforcement and Dowel Bars.
  - British Portland Cement.
  - Stoneware and Concrete Pipes.
  - Manhole Covers and Frames, etc.
- Particulars and Tender Form obtainable from the Borough Engineer, Town Hall, Croydon, Surrey. Closing date for Tenders, 19th JANUARY, 1961.

E. TABERNER,  
Town Clerk.

## CARSHALTON URBAN DISTRICT COUNCIL.

SUPPLY AND DELIVERY OF "NO WAITING" SIGNS.

TENDERS are invited for the SUPPLY of approximately 60 "NO WAITING" SIGNS, complete with Posts and Fittings.

Form of Tender, Specification and Bill of Quantities may be obtained from the office of the Engineer and Surveyor, Stone Court, The Grove, Carshalton, Surrey. No Tender will be accepted unless in a plain sealed envelope addressed to the Chairman of the Council at these offices and delivered not later than 12 Noon on WEDNESDAY, 25th January, 1961. The Tender must be endorsed "Supply and Delivery of 'No Waiting' Signs," but must not bear any name or mark indicating the sender.

The Council do not bind themselves to accept the lowest or any Tender.

C. H. DURRANT,  
Clerk of the Council.

Council Offices,  
The Grove,  
Carshalton,  
Surrey.

## BEESTON AND STAPLEFORD URBAN DISTRICT COUNCIL.

24IN. DIAMETER SURFACE WATER SEWER. QUEENS ROAD, WEST BEESTON, NOTTINGHAM.

TENDERS are invited for EXCAVATING, PROVIDING AND LAYING 108 lin. yd. of 24in. diameter CONCRETE PIPES through gardens in private ownership at QUEENS ROAD, WEST, Beeston.

The site is restricted, and only lightweight mechanical plant may be used.

Plan, Specification, Bill of Quantities and Form of Tender may be obtained from the Engineer and Surveyor, Town Hall, Beeston, Nottingham, upon payment of a deposit of Two Guineas, which will be returnable upon receipt of a bona-fide Tender not subsequently withdrawn.

Tenders to be returned to the undersigned in plain sealed envelopes marked "Tender for Surface Water Sewer, Queens Road West, Beeston," not later than Noon on MONDAY, 16th January, 1961.

H. D. JEFFRIES,  
Clerk of the Council.

Town Hall,  
Beeston,  
Nottingham.

## BISHOP'S STORTFORD URBAN DISTRICT COUNCIL.

HIGHWAYS ACT, 1959—CODE OF 1892.

MAKING-UP OF PRIVATE STREETS.

TENDERS are invited for the MAKING-UP of the FOLLOWING PRIVATE STREETS within the Urban District—

Kingsmead Road, Kingsbridge Road and Cherry Gardens.

The Work comprises the Construction of Carriageways and Footways, the Provision of Kerbing, the Construction of Surface Water Sewers, the Provision of Street Lighting, and the Soiling and Seeding of Verges.

Drawings may be inspected, and Tender documents obtained from, the office of the Engineer and Surveyor, Council Offices, The Causeway, Bishop's Stortford, on payment of a deposit of £2 2s., which will be refunded on receipt of a bona-fide Tender not subsequently withdrawn.

Tenders must be received by the Clerk of the Council, in the official envelope provided, by 28th JANUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

A. N. BULLOUGH,  
Clerk of the Council.

20th December, 1960.

## NEWRY NO. 2 RURAL DISTRICT COUNCIL.

COMPREHENSIVE WATER SCHEME.

SUPPLY AND INSTALLATION OF ELECTRICALLY DRIVEN BOOSTER PUMPING PLANTS AT CULLYHANNA AND LISLEA, CO. ARMAGH.

The Newry No. 2 Rural District Council invites TENDERS from experienced firms for the SUPPLY and INSTALLATION of DUPLICATE ELECTRICALLY DRIVEN CENTRIFUGAL PUMP UNITS and ancillary equipment in an existing Booster Station at Cullyhanna and in a new Booster Pump-house erected at Lislea. The respective duties for the pump sets shall be 200 g.p.m. against a total head of 345ft. and 350 g.p.m. against a total head of 103ft.

Firms tendering shall submit full details of the plant proposed, with all necessary preliminary Drawings, Performance Data, and details of Electrical Gear and other ancillary equipment.

Copies of the contract documents may be obtained from the Council's Consulting Engineers, MESSRS. NICHOLAS O'DWYER, SON AND PARTNERS, 5 Trevor Hill, Newry, Co. Down, Northern Ireland, on payment of £5 5s. deposit, refundable on receipt of a bona-fide Tender not subsequently withdrawn, and the return of the documents.

Specification, Tender Form, Drawings and other relevant information, enclosed in plain sealed envelope suitably endorsed and addressed to the Chairman, Newry No. 2 Rural District Council, shall be lodged with the undersigned not later than 10 a.m. on the 9th day of FEBRUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender received, and the accepted Tender will be subject to the approval of the Ministry of Health and Local Government.

By Order,

(Signed) W. B. O'DONOGHUE,  
Clerk of the Council.

Rural Council Offices,  
Daisy Hill,  
Newry.

## CONTRACTS

## CARMARTHENSHIRE COUNTY COUNCIL.

PONTARDULAIS-CROSS HANDS TRUNK ROAD, A.48.

MAESYBERLIAN AND CILRHEDYN IMPROVEMENTS.

TENDERS are invited for the EXCAVATION of approximately 10,000 cu. yd. of MATERIAL, CONSTRUCTION of SURFACE WATER DRAINS, FENCING, and other GENERAL ROADWORKS at Two Separate Sites, approximately one mile north of Forest, Pontardulais.

Contract documents can be obtained from, and Plans inspected at, the office of the County Engineer and Surveyor, County Hall, Carmarthen, on payment of a deposit of £2, which is returnable on receipt of a bona-fide Tender which is not subsequently withdrawn.

Tenders, with all documents, in a plain sealed envelope not bearing any name or mark indicating the sender and endorsed "Roadworks at Forest," must be returned to the undersigned not later than 16th JANUARY, 1961.

The County Council does not bind itself to accept the lowest or any Tender.

W. S. THOMAS,  
Clerk of the County Council.

County Hall,  
Carmarthen,  
December, 1960.

## BUCKS. COUNTY COUNCIL.

ANNUAL TENDERS, 1961-62.

TENDERS are invited for ROADWORKS, the SUPPLY of ROAD MATERIALS, and the HIRE of PLANT for the year ending 31st MARCH, 1962, as follows:

- (H. 1) Road and Bridge Maintenance and Strengthening Works on priced schedule basis.
- (H. 2) Asphalt Surfacing and Repairs.
- (H. 3) Supplying and Laying Plastic White Lines.

- (H. 4) Laying only Bituminous Macadam.
- (H. 4A) Supplying and Laying Dense Tarmacadam and Dense Bitumen Macadam.
- (H. 24) Painting Road Traffic Signs, etc.
- (H. 25) Fixing Reflecting Road Studs.
- (H. 26) Surface Dressing.

SUPPLY OF ROAD MATERIALS:

- (H. 5) Washed Sand and Ballast for Constructional Works.
- (H. 6) Portland Cement.
- (H. 7) Granite Setts.
- (H. 8) Precast Concrete Kerb, Flags and Edging.
- (H. 9) Iron Castings (Gully Grates, Weirs and Manhole Covers).
- (H. 10) Stoneware and Clayware Field Drainpipes.
- (H. 10A) Concrete and Concrete Porous Pipes.
- (H. 14) Standard Road Traffic Signs, Posts and Fittings.
- (H. 17) Road Surfacing Materials.
- (H. 18) Broken Stone, Pitching and Premixed Waterbound Macadam.

- (H. 19) Granites, Limestone and Slag Chippings for Surface Dressings.
- (H. 20) Sand and Shingle for Gritting and Surface Dressings.
- (H. 21) Tar and Cold Bitumen Emulsions for Surface Dressings.

- HIRE OF PLANT:
- (H. 22) Steam, Petrol or Diesel Rollers.
- (H. 23) Motor Lorries and Tractors for daywork and general haulage.

Forms of Tender, with Specifications and Conditions, may be obtained from the County Surveyor, County Offices, Aylesbury, on receipt of a stamped, addressed foolscap envelope.

Tenders must reach the undersigned not later than FRIDAY, the 3rd February, 1961, in the envelope provided, which must not bear any name or mark indicating the sender, but must be endorsed "Tender for..."

The Council do not bind themselves to accept the lowest or any Tender, and reserve the right to accept any Tender in part only.

R. E. MILLARD,  
Clerk of the County Council.

County Hall,  
Aylesbury,  
19th December, 1960.

## BUCKS COUNTY COUNCIL.

CHALFONT ST. PETER—SLOUGH ROAD, A.332. ROADWORKS—BELLS HILL, STOKE POGES.

TENDERS are invited for ROADWORKS (approximately 500 yd.), comprising Realigning and Widening of the Carriageway with Lean Rolled Concrete and Tarmacadam Shaping, including Footways, Kerbing, Channelling, Drainage and ancillary Works.

Drawings may be seen at the offices of the County Surveyor, County Offices, Aylesbury, from whom Contract documents may be obtained on payment of a deposit of £2, returnable on receipt of a bona-fide Tender.

Tenders must be received by me by 10 a.m. MONDAY, 23rd January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

R. E. MILLARD,  
Clerk of the Council.

County Hall,  
Aylesbury,  
December, 1960.

## HORBURY URBAN DISTRICT COUNCIL.

ANNUAL CONTRACTS.

The above Council invite TENDERS for the SUPPLY and DELIVERY of the UNDERMENTIONED MATERIALS and TRANSPORT for the year ending 31st March, 1962.

- (1) Cement.
- (2) 240-Volt Lamps for Street Lighting.
- (3) Gravel and Sand.
- (4) Lime.
- (5) Hard Stone Kerbing, Edging and Grit Setts.
- (6) Concrete Kerbing, Edging and Flags.
- (7) Tarred Slag.
- (8) Tar Spraying and Light Bituminous Spraying.
- (9) Steam Rolling.
- (10) Motor Haulage.
- (11) Cold Asphalt.
- (12) Dustbins and Lids.

Forms of Tender may be obtained from the Engineer and Surveyor, Town Hall, Horbury, and firms should state for which of the above sections they wish to submit Tenders. Tenders must be delivered to me, in the official envelope provided, not later than WEDNESDAY, the 25th January, 1961.

All Tenders, except dustbins, will be subject to the West Riding County Council's General Conditions of Contract, a copy of which may be inspected, along with Specifications, at the Office of the Engineer and Surveyor.

H. SENIOR,  
Clerk of the Council.

Town Hall,  
Horbury,  
Near Wakefield.  
31st December, 1960.

## CONTRACTS

## SOMERSET COUNTY COUNCIL.

TENDERS 1961-62.

TENDERS are invited for the SUPPLY of the UNDERMENTIONED SERVICES and MATERIALS during the year ending 31st March, 1962:

First Schedule

- (1) Mechanical Haulage (Districts).
- (2) Haulage of Road Materials (County Quarries).
- (3) Rolling.
- (4) Hire of Paver Finishers.
- (5) Bituminous Mortar.
- (6) Cold Asphalt.
- (7) Grit, Gravel and Sand.
- (8) Concrete Products.
- (9) Stoneware Pipes and Fittings.
- (10) Manhole Covers, Gully Gratings and Frames.
- (11) Reclaimed Granite Setts.
- (12) Binders for the Manufacture of Precast Macadam.
- (13) Surface Dressing Materials (Tar, Bitumen and Emulsions).
- (14) Waste and Rags.
- (15) Tools, Rubber Boots and Overalls.
- (16) Grass Seed and Quickthorn Hedge Plants.
- (17) Galvanised Fencing Materials.
- (18) Sawn Oak and Round Softwood Fencing Posts.
- (19) Ready-Mixed Concrete.
- (20) Provision and Erection of Fencing.

Second Schedule

- (21) Fuel Oil.
- (22) Petroleum Spirit.
- (23) Plastic White Line Material and Supplying and Laying.
- (24) Heating and Planing.
- (25) Carpet Coating (Supplying and Laying).
- (26) Hot Rolled Asphalt (Supplying and Laying).
- (27) Roadstone.
- (28) Tarmacadam and Bituminous Macadam.
- (29) Chippings (Granite and other Hardstone).
- (30) Plant Hire.
- (31) Mechanical Emptying and Cleansing of Gullies and Manholes.

Particulars and Forms of Tender are available now for the Items (1-20) in the First Schedule, and will be available on and after 23rd January, 1961 for the Items (21-31) in the Second Schedule, and may be obtained from the County Surveyor, County Hall, Taunton. Applicants must state clearly for which Items Tender Forms are required.

No Tender will be received except in a plain envelope provided for the purpose, which shall bear the word "Tender," followed by the subject to which it relates, but shall not bear any name or mark indicating the sender, and shall be delivered or sent by post to reach the Clerk of the County Council, County Hall, Taunton, in respect of items in the First Schedule not later than SATURDAY, 21st January, 1961, and for items in the Second Schedule, not later than MONDAY, 13th February, 1961.

The County Council do not bind themselves to accept the lowest or any Tender.

J. H. H. WILKES,  
County Surveyor.

## EAST SUFFOLK COUNTY COUNCIL.

TENDERS are invited for SUPPLIES IN BULK of the FOLLOWING GOODS:

- (1) Cutlery.
- (2) Crockery and Glassware.
- (3) Timber for Handicraft Centres.
- (4) Woodwork and Metalwork Tools.
- (5) Art Materials and Brushes.
- (6) Cleaning and General Equipment (including Brooms, Brushes, Polishes, Scouring Powder and Miscellaneous Hardware).
- (7) Gardening Tools and Materials.
- (8) Stationery Sundries.

Firms desirous of submitting Tenders are invited to apply to the CHIEF EDUCATION OFFICER, Education Office, Rope Walk, Ipswich, for inclusion in the approved list of contractors. Firms accepted will be sent Tender forms and Conditions of Contract.

Closing date for receipt of Tenders: 10th JANUARY, 1961.

## BOROUGH OF BROMLEY.

ANNUAL TENDERS.

TENDERS are invited for the SUPPLY of the UNDERMENTIONED MATERIALS or SERVICES for the year ending 31st March, 1962:

- (1) Tarmacadam.
- (2) Bitumen Macadam and Precast Chippings.
- (3) Fine Cold Asphalt.
- (4) Granite Chippings.
- (5) Artificial Stone Paving.
- (6) Cement.
- (7) Concrete Aggregate, Sand, Ballast and Lime-sand Mortar.
- (8) Manhole Covers and Frames, Gully Grates and Frames.
- (9) Mechanical Sweeper Brooms.
- (10) Haulage of Clinker.
- (11) Solid Fuel.
- (12) Protective Clothing.

Further particulars may be obtained upon application to the Borough Engineer at these Offices.

Tenders, in plain sealed envelopes, endorsed in accordance with the instructions given on the Tender Form, are to be delivered to the undersigned not later than FRIDAY, 27th January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

LIONEL KAYE,  
Town Clerk.

Municipal Buildings,  
Bromley,  
Kent.

## BOROUGH OF MACCLESFIELD.

WARWICK ROAD EXTENSION.

CONSTRUCTION OF ROAD AND SEWERS.

TENDERS are invited for the CONSTRUCTION of approximately 125 lin. yd. of ROADWAY, 28ft. overall width, Graded Limestone Foundation, Kerbed and Surfaced with Bituminous Macadam; also approximately 355 yd. of 6in. diameter SEWER and TWO BRICK MANHOLES.

Specification, Bill of Quantities and Form of Tender may be obtained from J. H. DOSSETT, ESQ., A.M.I.C.E., Borough Engineer, Town Hall, Macclesfield, on payment of a deposit of £2 2s., to be returned on receipt of a bona-fide Tender.

Tenders, together with all documents received, are to be enclosed in a plain sealed envelope endorsed "Tender for Warwick Road Extension," addressed to the undersigned and delivered not later than Noon on MONDAY, 23rd January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

W. ISAAC,  
Town Clerk.

Town Hall,  
Macclesfield.  
21st December, 1960.



## CONTRACTS

## BOROUGH OF OLDBURY.

The CORPORATION invites TENDERS for the SUPPLY of the UNDERMENTIONED MATERIALS during the year ending 31st March, 1962:—

- (1) Glass.
- (2) Cleaning Materials.
- (3) Siep, Gravel, Bituminous Macadam, Asphalt Macadam.
- (4) Disinfectants.
- (5) Concrete Kerbs and Flags.
- (6) Petrol, Oils and Paraffin.
- (7) Hardware, Ironmongery.
- (8) Brooms, Brushes, Mops, etc.
- (9) Stoneware Pipes.
- (10) Bricks.
- (11) Iron Castings.
- (12) Paints, Putty, White, etc.
- (13) Paint Brushes and Walloper.
- (14) Sanitary Appliances, Guttering, Taps, etc.
- (15) Donkey Jackets and Overalls.
- (16) Gravel, Sand, Lime and Cement.
- (17) Timber.
- (18) Electric Lamps and Fluorescent Tubes.

Specifications, Conditions and Forms of Tender may be obtained on application to the Borough Engineer and Surveyor, Municipal Bank Chambers, Oldbury, near Birmingham.

Tenders, in plain sealed envelopes, endorsed "Tender for ———", bearing no indication of the sender, must be delivered to the undersigned not later than 12 Noon on FRIDAY, the 27th January, 1961.

The Corporation does not bind itself to accept the lowest or any Tender.

KENNETH PEARCE,  
Town Clerk.

Municipal Buildings,  
Oldbury,  
Near Birmingham.  
23rd December, 1960.

## BOROUGH OF FARNWORTH.

## ANNUAL TENDERS.

TENDERS are invited for the SUPPLY of the FOLLOWING MATERIALS for the year ending 31st March, 1962:—

- (1) Screened Granite Chippings.
- (2) Precast Concrete Kerbs.
- (3) Precast Concrete Edgings.
- (4) Precast Concrete Flags.
- (5) Broken Stone.
- (6) Sand.
- (7) Tarrred Limestone.
- (8) Bituminous Macadam.
- (9) Cement.
- (10) Paraffin Oil.
- (11) Cast-Iron Gully Grids and Frames.
- (12) Cast-Iron Manhole Covers and Frames.

Specification, Conditions and Form of Tender may be obtained on application to the Borough Engineer and Surveyor, Town Hall, Farnworth, Bolton, Lancs.

Tenders, in plain sealed envelope, endorsed "Tender for ———", must be delivered to the undersigned not later than SATURDAY, January 28th, 1961.

T. HITCHEN,  
Town Clerk.

Town Hall,  
Farnworth,  
Bolton, Lancs.

## CITY OF MANCHESTER.

The Central Purchasing Committee invite TENDERS for BRICKS (Common, Selected Common, Second Engineering, Seconds Facing) and for BUXTON LIME required by the Corporation for the 12 months ending 31st March, 1962.

Forms of Tender returnable by 23rd JANUARY, 1961. Specifications and approximate requirements obtainable from the DIRECTOR OF WORKS, Purchasing Office, 324 Deansgate, Manchester, 5.

## CITY OF MANCHESTER.

TENDERS invited for ALTERATIONS and IMPROVEMENTS to BIRCHFIELDS PRIMARY SCHOOL.

Bill of Quantities from CITY ARCHITECT, P.O. Box 488, Town Hall.

Tenders returnable by 26th JANUARY, 1961.

## CITY OF MANCHESTER.

PRINCESS ROAD DEPOT—  
WORKSHOP MODERNISATION.

The Transport Committee invite TENDERS for the MODERNISATION of the WORKSHOPS and STORES in the existing garage at the PRINCESS ROAD DEPOT. The Scheme includes the Construction of a New Sunken Workshop and Repair Pits, and some Demolition Work and Re-roofing.

Tenders will be on a fixed-price basis. Tender documents will be issued on or about the 16th January, 1961, and will be returnable by 10 a.m. on the 6th February, 1961.

It is anticipated that a start can be made in the early summer of 1961, and the Contract period will be nine months.

Contractors wishing to Tender for this work are asked to submit their names to the GENERAL MANAGER, Manchester Corporation Transport Department, 55 Piccadilly, Manchester, not later than 12th JANUARY, 1961.

## URBAN DISTRICT COUNCIL OF RAYLEIGH.

## ANNUAL TENDERS.

TENDERS are invited for the SUPPLY and DELIVERY of the FOLLOWING MATERIALS during the period commencing 1st April, 1961, and ending 31st March 1962:—

- Tar Coated Gravel.
- Tarmacadam.
- Cold Asphalt.
- Cold Bitumen Emulsion.
- Sand.
- Grit.
- Shingle.
- Stone.
- Ballast.
- Hogglin.
- Clinker.
- Ashes.
- Kerbs.
- Paving Slabs.
- Brick Hardcore.

General Conditions and Form of Tender may be obtained from Mr. W. F. HOWLETT, M.I.Mun.E., Engineer and Surveyor, Council Offices, Rayleigh, and all applications for same must state the materials for which it is proposed to tender.

Tenders, in sealed envelopes, bearing no name or mark indicating the sender, endorsed "Annual Tenders," must reach the undersigned not later than 12 Noon on MONDAY, 16th January, 1961.

The Council does not bind itself to accept the lowest or any Tender, and reserves the right to accept whole or part of any Tender.

C. E. FITZGERALD,  
Clerk of the Council.

Council Offices,  
Hockley Road,  
Rayleigh, Essex.  
22nd December, 1960.

## CONTRACTS

## BOROUGH OF WEMBLEY.

## ANNUAL TENDERS FOR SUPPLIES, 1961/62.

TENDERS, which must be received not later than Noon on the 27th JANUARY, 1961, are invited for the SUPPLY of the FOLLOWING MATERIALS and the EXECUTION of the FOLLOWING WORKS for the year commencing 1st April, 1961:—

- (1) Cement, Hogglin, Ballast, Sand, Pea Shingle and Clinker.
- (2) Chain Link Fencing and Tennis Court Surrounds.
- (3) Precast Concrete Flags, Concrete Edging and Concrete Kerb.
- (4) Tarmacadam and Bituminous Macadam.
- (5) Bitumen Emulsion.
- (6) Surface Dressing of Roads.
- (7) Maintenance of Roads, Sewers and Footpaths.
- (8) Protective Clothing (Overalls).
- (9) Fuel Oil (Heating).
- (10) Electric Lamps.
- (11) Petroleum Spirit, etc.

Forms of Tender, other than for items 10 and 11, may be obtained on application, accompanied by an addressed foolscap envelope, to the BOROUGH ENGINEER AND SURVEYOR; and for items 10 and 11, to the MAINTENANCE AND TRANSPORT ENGINEER, Town Hall, Wembley.

## CITY AND COUNTY OF THE CITY OF LINCOLN.

## SURFACING—YARBOROUGH ROAD (PART).

MOORLAND AVENUE (PART) AND  
DE WINT AVENUE.

TENDERS invited for COLD ASPHALT SURFACING, involving approximately 14,700 sq. yd. of Carriageway. Applications for documents to City Engineer, Silver Street, Lincoln, accompanied by a deposit of Two Guineas (cheques payable to Lincoln Corporation), refunded upon receipt of a bona-fide Tender not subsequently withdrawn. General Conditions of Contract, Specification and Drawing may be inspected at the City Engineer's Office.

Tenders, in plain sealed envelopes endorsed "Cold Asphalt Surfacing," must be delivered to the undersigned not later than First Post, SATURDAY, 21st January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

J. HARPER SMITH,  
Town Clerk.

Town Clerk's Office,  
Saltergate,  
Lincoln.

## CITY OF BRADFORD.

## ANNUAL TENDERS FOR ROAD MATERIALS, ETC.

TENDERS are invited for the SUPPLY of the UNDERMENTIONED ITEMS during the year ending 31st March, 1962:—

- (1) Road Stone and Chippings.
- (2) Cement.
- (3) Refined Tar.
- (4) Salt Glazed Ware Pipes and Fittings.
- (5) Precast Concrete Kerbs and Flags.
- (6) Lubricating Oils.
- (7) Salt for Snow Clearance.

Particulars and Forms of Tender may be obtained on application at the Office of the City Engineer and Surveyor, Town Hall, Bradford, 1.

Tenders should be returned in the envelope provided, and must reach me not later than FEBRUARY 4th, 1961.

HENRY PATTEN,  
Town Clerk.

Town Hall,  
Bradford, 1.

## HORNCURCH URBAN DISTRICT COUNCIL.

RECONSTRUCTION OF LAMBS LAKE BETWEEN  
NEW ROAD (A.13) AND UPMINSTER ROAD.

TENDERS are invited for the ABOVE-MENTIONED WORK, comprising the FOLLOWING:—

- (1) Excavation for, and Laying of, 9in. Porous Pipes (220 lin. yd. approx.) and 12in. Salt Glazed Pipes (20 lin. yd. approx.).
- (2) Providing and Laying Kerb and Edging (total approx. 1,500 lin. yd.).
- (3) Excavation for, and Provision of, Concrete Haunch to existing Carriageway (1,300 sq. yd. approx.).
- (4) Surfacing of Carriageway and Footpath with Bitumen Macadam (total approx. 5,300 sq. yd.), together with all ancillary works.

The Conditions of Contract, Specification and Bills of Quantities may be obtained from the Office of the Engineer and Surveyor, Council Offices, Billet Lane, Horncchurch, upon payment of a deposit of Two Guineas which will be refunded in the case of a bona-fide Tender upon acceptance of a Tender by the Council.

The documents and priced Bill of Quantities must be returned to the undersigned not later than Noon on MONDAY, 23rd January, 1961, sealed in the envelope provided which shall bear no indication of the identity of the person(s) tendering.

P. L. COX,  
Clerk of the Council.

Council Offices,  
Billet Lane,  
Horncchurch, Essex.

## LEIGHTON BUZZARD URBAN DISTRICT COUNCIL.

## ANNUAL TENDERS, 1961/62.

TENDERS are invited for the SUPPLY of the FOLLOWING MATERIALS for the year ending 31st March, 1962:—

- Schedule
- (1) Granite Chippings.
- (2) Refined Tar and Bituminous Emulsion.
- (3) Tarrred and Bituminous Macadam and Cold Asphalt.
- (4) Precast Concrete Kerbs, Setts and Paving Slabs.
- (5) Ballast, Sand and Gravel.

Specifications, Stipulations, Contract and Forms of Tender may be obtained from the Engineer and Surveyor, Council Offices, North Street, Leighton Buzzard.

Completed Tenders, in plain sealed envelope endorsed "Tender for Road Materials—Schedule ———," must be delivered to the undersigned not later than 12 Noon on WEDNESDAY, 1st February, 1961.

The Council does not bind itself to accept the lowest or any Tender, and reserves the right to accept any Tender in whole or in part for the supply of any materials.

D. L. OVERTON,  
Clerk of the Council.

Council Offices,  
North Street,  
Leighton Buzzard.  
28th December, 1960.

## CONTRACTS

## BOROUGH OF PORT TALBOT.

STREET LIGHTING SCHEMES.  
CONVERSION FROM GAS TO ELECTRICITY.

- (a) BAGLAN ESTATE AND SUNNYCROFT ROAD AREAS.
- (b) TAREN TERRACE TO VIADUCT PONTRYDYFEN AND DISTRICT ROADS.
- (c) REPLACEMENT OF GROUP B—LIGHTING—TYR OWEN ROW TO TAREN TERRACE, CWMAYON B.4286.

TENDERS are invited for EXECUTING WORKS in the VARIOUS AREAS LOCATED ABOVE.

Plans may be inspected, Specifications, General Conditions of Contract, Bill of Quantities and Form of Tender, are obtainable at the Borough Engineer and Surveyor's Department, Municipal Buildings, Port Talbot.

Tenders, endorsed "Street Lighting Schemes—Port Talbot," and addressed to the undersigned to be received not later than Noon on 20th JANUARY, 1961.

The lowest or any Tender will not necessarily be accepted.

W. KING DAVIES,  
Town Clerk.

Municipal Buildings,  
Port Talbot.  
28th December, 1960.

## CITY OF CARLISLE.

## BLACKWELL RELIEF SEWER.

TENDERS are invited for the ABOVE. The Work comprises the Laying of 2,400 lin. yd. of Sewer, varying in diameter from 45in. to 12in., and ancillary Works.

Particulars from City Surveyor, 18 Fisher Street. Closing date, 27th JANUARY, 1961.

H. D. A. ROBERTSON,  
Town Clerk.

## RHYL URBAN DISTRICT COUNCIL.

## WATER DEPARTMENT.

## TENDERS FOR MAINLAYING.

TENDERS are invited from experienced contractors for the LAYING of 6,400 yd. of 15in. dia. ASBESTOS-CEMENT WATER MAIN between BODELYWDDAN and RHYL.

Drawings may be inspected at the Office of the Water Engineer, Paradise Street, Rhyll, from whom a copy of the Conditions of Contract, Specification and Bill of Quantities may be obtained on payment of a deposit of £2 which will be refunded on receipt of a bona-fide Tender.

Tenders, in plain sealed envelopes bearing no name or mark indicating the sender, and endorsed "Tender for 15in. Trunk Main," are to be delivered to the undersigned not later than 12 Noon on TUESDAY, 31st January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

A. E. EDWARDS,  
Clerk of the Council.

Council Offices,  
Rhyll, Flint.

## RHYL URBAN DISTRICT COUNCIL.

## WATER DEPARTMENT.

## PUMPING PLANT AT ALED PUMPING STATION.

TENDERS are invited for the SUPPLY of a HORIZONTAL CENTRIFUGAL PUMP having a capacity of 1,400 g.p.m. at a total head of 270ft., together with Motor, Starter, Pipework, Valves, etc.

Contract documents may be obtained from the Water Engineer, Paradise Street, Rhyll, upon payment of a deposit of £1, which will be refunded on receipt of a bona-fide Tender.

Tenders, in plain sealed envelopes bearing no name or mark indicating the sender and endorsed "Tender for Pumping Plant—Water Department," are to be delivered to the undersigned not later than 12 Noon on TUESDAY, 31st January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

A. E. EDWARDS,  
Clerk of the Council.

Council Offices,  
Rhyll, Flint.

## SOUTHAM RURAL DISTRICT COUNCIL.

## FARNBOROUGH SEWERAGE.

The Council invite TENDERS from contractors having experience in similar work, for THIS SCHEME, which consists of the FOLLOWING:—

- (a) Laying of approx. 1,800 yd. of 6in. dia. G.S.S. Sewers, together with the Construction of relevant Manholes.
- (b) Construction of a Sewage Disposal Works consisting of Two Septic Tanks (capacity 9,450 gallons), One Percolating Filter (183 cu. yd.), Two Humus Tanks (capacity 1,500 gallons), and a Sludge and Supernatant Water Pump Station, together with the necessary Drains, Chambers, etc.
- (c) House Connections.

All in accordance with the Drawings, Specifications, Bills of Quantities and Conditions of Contract prepared by MESSRS. W. HERBERT BATEMAN AND PARTNERS, of Bathaston, Norwich and Westminster, the Consulting Engineers to the Council.

The Drawings, Specification, Bill of Quantities and General Conditions of Contract are now available for inspection by appointment at the Offices of the Council or at the Bathaston Office of the Consulting Engineers during normal office hours, but technical questions can be dealt with only at the latter office.

Copies of the General Conditions, Specification, Bill of Quantities and Form of Tender will be issued to intending contractors on application to MESSRS. W. HERBERT BATEMAN AND PARTNERS, Chesterfield House, Bathaston, Bath. Applications must be accompanied by a deposit of £5 5s, which will be returned upon receipt of a bona-fide Tender not subsequently withdrawn.

Applications for Tender documents must be accompanied with the names and addresses of three Engineers under whose direction similar schemes have been carried out by the applicant.

Sealed Tenders, on the form provided in the Bill of Quantities, endorsed "Farnborough Sewerage Scheme," accompanied by the Bill of Quantities priced in ink, should be posted to reach the undersigned not later than the First Post on MONDAY, 6th February, 1961.

The Council do not bind themselves to accept the lowest or any Tender, and will not be responsible for any expenses incurred by those tendering.

J. I. YOUNG,  
Clerk to the Council.

Council Offices,  
Coventry Road,  
Southam,  
Warwickshire.

## CONTRACTS

## WEST SUFFOLK COUNTY COUNCIL.

## COUNTY ROADS AND BRIDGES.

**TENDERS**, to be operative during the year ending 31st March, 1962, are invited for the FOLLOWING—

(a) The Supply of the Undermentioned—  
Roadstone (Supply and Deliver).  
Tar and Bitumen Coated Stone (Supply, Deliver and or Lay).  
Gravel, Sand, Shingle and Pit Stone.  
Tar, Tar-Bitumen Compounds and Bitumen Emulsions (Supply and Application).  
Hot Tar and Bituminous Gravel Mixes (Supply and or Lay).  
Road Tools and Implements.  
Rebriasting of Sweeping Machine Brushes.  
Cement.  
Petrol and Diesel Fuel Oils.  
Precast Concrete Kerbs and Channel.  
Plastic White Lines (Supply only or Supply and Lay).  
Reinforced Concrete Fencing Posts.  
Castings (Manhole Covers, Gratings, etc.).  
Ready Mixed Concrete.

(b) On Hire—  
Road Rollers.  
Air Compressors, Concrete Mixers (5/3½ and 10/7).  
Concrete Vibrators (Petrol driven, both Scream and Pokers).  
Cranes, Crawler Excavators up to 198B.  
Crawler Tractor Shovels, Crawler Tractors with Bull or Angle Dozer or Scraper, Diggers, Loading Shovels, Low-loaders, Pumps, 3in. and upwards (Centrifugal and Lift and Force).  
Vibrating Rollers, Wheeled Excavators, Wheelbarrows, Tractors with Scrapers, Barber-Greene or Blaw Knox Pavers, Rotavators, Harrows, Disc and Chain.

(c) Carrying out the following Types of Work—  
Laying Precast Kerb and Channel.  
Provision and Erection of Strained Wire Fencing, Dropper Pattern.  
Bridge Foundation Works.

Forms of Tender, with Specifications and Conditions, may be obtained from the undersigned. Sealed Tenders, endorsed "Road Contracts," must be delivered to the Clerk of the County Council before 10 a.m. on **MONDAY, 23rd January, 1961.**

J. G. H. HEASMAN, A.M.I.C.E.,  
County Surveyor.

Manor House,  
Bury St. Edmunds.  
31st December, 1960.

## FLINTSHIRE COUNTY COUNCIL.

## HIGHWAYS DEPARTMENT.

**TENDERS** are invited for the SUPPLY of GRANULAR SUB-BASE FILLING MATERIALS and ASHES. Tender forms, obtainable from the County Surveyor, Llanwrin, Mold, to be returned to me not later than Noon, 30th JANUARY, 1961.

W. HUGH JONES,  
Clerk of the County Council.

County Buildings,  
Mold.

## BOROUGH OF NEWBURY.

## ANNUAL TENDERS.

The CORPORATION invite TENDERS for the SUPPLY of the UNDERMENTIONED MATERIALS and SERVICES for the 12 months commencing 1st April, 1961.

- (1) Tarmacadam.
  - (2) Shingle for Tarring and Concrete Ballast.
  - (3) Cleaning Windows of Public Buildings.
  - (4) Lorry Hire.
  - (5) Coke and Coal.
- Further particulars and Forms of Tender can be obtained from the Borough Surveyor, and applicants must state the form or forms they require. Tenders, in plain sealed envelopes endorsed "Tender for —," must be delivered to the undersigned not later than **SATURDAY, 28th January, 1961.**

LESLIE SOUTHERN,  
Town Clerk.

Municipal Buildings,  
Newbury,  
Berks.

## CITY OF SALFORD.

## HOUSING COMMITTEE.

**FIXED-PRICE TENDERS** are invited for the ERECTION of TWO BLOCKS of 11-STORY FLATS at SUSSEX STREET, Salford, 7.

Plans and General Conditions may be inspected at the Office of the Architects, MESSRS. CRUICKSHANK AND SEWARD, Royal London House, 196 Deansgate, Manchester. Specifications, Bills of Quantities and Form of Tender (which will be available on 16th January 1961) are obtainable from the Architects on payment of a deposit cheque for £3 3s. (Three Guineas) made payable to City of Salford Housing Committee and which will be returnable on the submission of a bona-fide Tender not subsequently withdrawn.

Firm-price Tenders are to be endorsed as instructed and addressed to the TOWN CLERK, Town Hall, Salford, 3, so as to be received not later than 10 a.m. on **TUESDAY, 7th February, 1961.**

The Council is not bound to accept the lowest or any Tender.

## CITY OF SALFORD.

## SUPPLY OF FENCING AND GATES.

**TENDERS** are invited for the SUPPLY and DELIVERY of WROUGHT-IRON FENCING for the ORDSALL FLATS ESTATE, Salford, 5, in accordance with particulars to be obtained from the Director of Parks, Bullie Hill Park, Salford, 6.

Tenders, in sealed envelopes addressed to the Chairman, Parks, etc., Committee, Town Hall, Salford, 3, and endorsed "Fencing and Gates—Ordsall Flats Estate," should be forwarded to arrive not later than 14th JANUARY, 1961.

R. RIBBLESDALE THORNTON,  
Town Clerk.

## CITY OF SALFORD.

## PRIVATE STREET WORKS—CODE OF 1962.

**FIRM-PRICE TENDERS** are invited for the MAKING-UP and COMPLETING with COATED MACADAM on STONE PITCHED CARRIAGEWAY and FLAGGED FOOTPATHS of DEVONSHIRE ROAD (part), Salford, 6. Plans and Specification may be examined at the Office of, and Bill of Quantities and Form of Tender obtained from, the City Engineer, Town Hall, Salford, 3.

Tenders are to be returned to the undersigned, in a plain envelope endorsed "Tender for Street Works," by 10 a.m. on **10th January, 1961.**

R. RIBBLESDALE THORNTON,  
Town Clerk.

## CONTRACTS

## COUNTY OF WESTMORLAND.

## COUNTY ROAD TENDERS.

The Council are prepared to receive TENDERS for the WORK of SPRAYING approx. 100,000 gallons of TAR or BITUMEN on ROADS in the SOUTHERN DIVISION of WESTMORLAND.

Details and Specification obtainable from COUNTY SURVEYOR, County Hall, Kendal.  
20th December, 1960.

## COUNTY OF WESTMORLAND.

## COUNTY ROAD TENDERS.

The Council are prepared to receive TENDERS for the SUPPLY of 300,000 gallons (more or less) of REFINED TARS, TAR COMPOUNDS, BITUMENS and BITUMINOUS EMULSIONS for use on the COUNTY ROADS during the year ending 31st March, 1962.

Forms of Tender may be obtained from COUNTY SURVEYOR, County Hall, Kendal.  
20th December, 1960.

## SURREY COUNTY COUNCIL.

## HIGHWAYS AND BRIDGES DEPARTMENT.

**TENDERS** are invited for MAKING-UP approx. 700 lin. yd. of PARK ROAD, Limpsfield, Oxted, work comprising Tarmacadam Carriageway and Footways, Kerbing, etc.

Documents, obtainable from Office of the County Engineer, where Drawings may be inspected, are returnable by 21st JANUARY, 1961, to the CLERK OF THE COUNCIL, County Hall, Kingston-upon-Thames.

No Tender will be received except in a plain sealed envelope bearing the words "Tender for Park Road (Section 2), Limpsfield."

## CITY AND COUNTY OF BRISTOL.

## CITY ENGINEER AND PLANNING OFFICER'S DEPARTMENT.

**TENDERS** invited for SUPPLY of the FOLLOWING:  
1 Concrete Plaster Mixers.  
2 Self-contained Breakers.  
3 Motor Mowers 30in.  
2 Additional Units for Quintuple Gangmower.  
All items, or any single item, may be tendered for. Specifications from CITY ENGINEER AND PLANNING OFFICER, Cabot House, Deaneury Road, Bristol, 1.

Tenders to be submitted by 1st FEBRUARY.

## CITY OF CANTERBURY.

## CONSTRUCTION OF RING ROAD (PART) AND LINK ROAD TO A.2.

**TENDERS** are shortly to be invited for the CONSTRUCTION of approximately 1,570 lin. yd. of DUAL CARRIAGEWAY ROAD, and the WIDENING of 335 lin. yd. of an EXISTING ROAD. The Scheme includes Four Prestressed Concrete Bridges and the usual ancillary works.

Persons or firms wishing to Tender will be required to submit their name and the details required on a form to be obtained from the undersigned and returned not later than First Post on **MONDAY, 23rd January, 1961.**

Further particulars of the Scheme will be supplied with the forms of application.

(Signed) J. E. RHODES.

Municipal Buildings,  
Canterbury,  
December, 1960.

## ASHFORD (KENT) URBAN DISTRICT COUNCIL.

**TENDERS** are invited for the SUPPLY of the UNDERMENTIONED MATERIALS and SERVICES for the year ending 31st March, 1962—

- Contract
- (1) Road Making Materials.
  - (2) Ready Mix Concrete.
  - (3) Aggregates, Lime and Cement.
  - (4) Precast Concrete Kerbs, Paving Slabs, Path Edging and Road Gully Pots.
  - (5) Salt.
  - (6) Manhole Covers and Frames, Gully Covers and Frames.
  - (7) Mechanical Haulage.
  - (8) Scavenger Brooms and Reels for Lacre.
  - (9) Bedford Sweeper.
  - (10) Protective Clothing.
  - (11) Coke.
  - (12) Soaps and Disinfectants.
  - (13) Electric Lamps.
  - (14) Dustbins.
- Applications for Forms of Tender and Conditions, to be returned by 27th JANUARY, 1961, should be made to the Surveyor, 1 Elwick Road, Ashford, Kent, stating the contract(s) in which interested, and enclosing a 6d. stamped addressed envelope.

G. H. REDFERN,  
Clerk of the Council.

Council Offices,  
Church,  
Ashford, Kent.  
22nd December, 1960.

## HEBBURN URBAN DISTRICT COUNCIL.

**TENDERS** are invited for the SUPPLY of the FOLLOWING for a period of 12 months from the 1st April, 1961—

- Roadstone, Tarmacadam and Granite Chippings.  
Tar and Bituminous Road Spraying Compound.  
Manhole Covers, Gullies, Domestic Hot Water Boilers, etc.  
Concrete Flagging and Kerbing.  
Portland Cement.  
Stoneware Drain Pipes.  
Brushes, Shovels, etc.  
Surface Spraying.  
Building Materials.  
Hardware and Sanitary Fittings.  
Lubricating Oils and Grease.  
Coke and Coal.  
Paint.  
Glass.

The Council may give preference to "fixed-price" Tenders.

Forms of Tender may be obtained from the Engineer and Surveyor. The Tenders must be delivered to the undersigned not later than Noon on **TUESDAY, 17th January, 1961.**

No Tender will be accepted if it is not sealed and delivered in the envelope provided for the purpose, endorsed "Tender for —."

The Council do not bind themselves to accept the lowest or any Tender in its entirety.

K. D. BROWNLOW, D.P.A.,  
Acting Clerk to the Council.  
Council Offices,  
Argyle Street,  
Hebburn,  
21st December, 1960.

## CONTRACTS

## DORSET COUNTY COUNCIL.

## ANNUAL TENDERS FOR ROAD MATERIALS AND SERVICES.

**TENDERS** are invited for the SUPPLY of the FOLLOWING MATERIALS and SERVICES for a period of one year from the 1st April, 1961:

- | Form No. | Description  |
|----------|--|
| (1)      | Tarmacadam and Bituminous Macadam.                         |
| (2)      | Hardstone—Granite, Basalt, Limestone, etc.                 |
| (2a)     | Granular Base Aggregate.                                   |
| (3)      | Bituminous Asphalt.  |
| (4)      | Local Stone, Gravel, Sand and Ready Mixed Concrete.        |
| (5)      | Road Tar, Tar Bitumen Compounds and Bitumens.              |
| (6)      | Signs and Castings.  |
| (7)      | Concrete Goods, Stoneware Pipes, Natural Kerb, and Cement. |
| (7a)     | Paint.   |
| (9)      | Mechanical Haulage (daywork and piece-work).               |
| (10)     | Mechanical Plant (hire).                                   |
| (11)     | Road Rolling.  |
| (12)     | Heating and Planing.                                       |
| (13)     | Plastic White Lines.                                       |
| (14)     | Reflecting Road Studs (Laying).                            |

Forms of Tender may be obtained from the County Surveyor, County Hall, Dorchester, Dorset. Applicants should state for which item(s) they wish to tender, quote the appropriate form number(s) and enclose a stamped addressed envelope.

Sealed Tenders, in the special envelopes provided, must be delivered to the undersigned not later than **MONDAY, 23rd January, 1961.**

A. C. TEMPLEMAN,  
Acting Clerk of the County Council.  
County Hall,  
Dorchester.

## BOROUGH OF TWICKENHAM.

## ANNUAL TENDERS.

The CORPORATION hereby invite TENDERS for the SUPPLY of MATERIALS for a period of 12 months from 1st April, 1961:

- Granite Chippings.  
Ballast, Shingle, Gravel and Sand.  
Precast Concrete Kerbs and Quadrants.  
Portland Cement.  
Coke.  
Household Sundries.  
Iron Castings.  
Street Gullies and Drain Pipes.  
Haulage.  
Tarmacadam and Cold Asphalt.  
Artificial Stone Paving.  
Bituminous Compounds.  
Brooms.  
Picks, Mattocks, Shovels, etc.  
Street Lighting Columns.  
Street Lighting Fittings.  
Sanitary, Plumbing and Hardware.  
Decorating Materials.  
Ironmongery.  
Timber.  
Plastic White Road Markings and Striping of Pedestrian Crossings.  
Posts, Signs, Nameplates, etc.  
Electric Cables, Conduit, Lamps, etc.  
Tiled Fireplaces—Boilers.

Forms of Tender and Specifications may be obtained upon application to the Borough Engineer and Surveyor, Municipal Offices, Twickenham.

Tenders, in the envelope provided and not bearing any name or mark indicating the sender, are to be delivered to the undersigned on or before 10 a.m. on **MONDAY, 23rd January, 1961.**

The Corporation do not bind themselves to accept the lowest or any Tender, and any person whose Tender may be accepted will be required to enter into a proper contract with, if required, two sureties, to be approved by the Corporation.

W. H. JONES,  
Town Clerk.

Municipal Offices,  
Twickenham.

## BASILDON URBAN DISTRICT COUNCIL.

## TENDERS FOR MATERIALS AND SERVICES.

**TENDERS** are invited for SUPPLY of MATERIALS and SERVICES for the 12 months ending 31st March 1962.

- | Ref. | Description   |
|------|---|
| (1)  | Hardcore and Ashes.                                 |
| (2)  | Cold Asphalt.                                       |
| (3)  | Refilling and Supply of Mechanical Sweeper Brushes. |
| (4)  | Ready Mixed Concrete.                               |
| (5)  | Cold Bituminous Emulsion.                           |
| (6)  | Concrete Flags, Kerbs and Edgings.                  |
| (7)  | Motor Haulage.                                      |
| (8)  | Salt.   |
| (9)  | Petrol, Paraffin, Derv, Gas Oil and T.V.O.          |
| (10) | Local Stone, Sand, Shingle, etc.                    |
| (11) | Tar, Tar Compounds and Bitumen.                     |
| (12) | Tarred and Bituminous Macadam.                      |
| (13) | Granite Chippings.                                  |
| (14) | Mild Steel Dustbins.                                |
| (15) | Tyres, Tubes and Retreads.                          |
| (16) | Cement.   |

Tender documents are obtainable from Engineer and Surveyor, Council Offices, 88 Town Square, Basildon, Essex.

Each Tender, contained in a plain sealed envelope, endorsed in the top left-hand corner "Tender for —," bearing no name or mark indicating the sender, is to be received by the undersigned at the Council Offices not later than **FRIDAY, 20th January, 1961.**

The Council do not bind themselves to accept the lowest or any Tender, and reserve the right to accept the whole or any part of a Tender.

A. HATT,  
Clerk to the Council.

## WINDSOR RURAL DISTRICT COUNCIL.

**TENDERS** are invited for ROAD AND SEWER WORKS, as referred to hereunder, at the KINGSWICK WOODLAND SITE, SUNNINGHILL, Ascot, Berks.

The site concerned includes a pond, and is heavily wooded.

The work comprises the Construction of approx. 350 lin. yd. of 30in. Roadway, with 125 lin. yd. of 6in. Soil Sewer and 280 lin. yd. Stormwater Drain. Plans and Specification have been prepared by the Council's Architect, MR. L. H. GRAY, F.R.I.C.S., 4 Four Winds, Darnley Road, Sunningdale, from whom Tender documents can be obtained.

Tenders, in sealed envelopes marked "Kingswick Woodland Site," should be sent to the undersigned to arrive not later than First Post on **16th FEBRUARY, 1961.**

G. W. ALLEN,  
Clerk of the Council.

Council Offices,  
Kingswick,  
Sunninghill,  
Ascot, Berks.

## CONTRACTS

## N.A.T.O. COMMON INFRASTRUCTURE.

## SLICE VI.

## NAVAL BASE INSTALLATIONS.

Final notice is hereby given that INTERNATIONAL COMPETITIVE BIDS will be invited on or about the 31st March, 1961, for the SUPPLY, INSTALLATION and SETTING to WORK at a depot on the West Coast of Scotland of Three ROADSIDE METERING PUMPS (one Petrol and two Diesel).

The approx. cost of the contract is £740. The work will be carried out as one contract, which will be undertaken as a sub-contract within the framework of the main contract for the construction of the depot.

It should be noted that the importation of labour from sources outside the United Kingdom may be subject to restriction and that permission could, in any case, only be given on an undertaking that the contractor would pay rates of wages and observe hours and conditions of labour not less favourable than those established for U.K. labour for the trade or industry in the same area.

The closing date for the receipt of bids will be 1st MAY, 1961.

Firms wishing to bid must formally notify their desire by application to the address below by 31st JANUARY, 1961.

Inquiries regarding bidding should be addressed to Director-General, Navy Works, ADMIRALTY, Chamberlain Way, Pinner, Middlesex, England, quoting Reference N.A.T.O. C.I. Job No. 3 (Sub-contract Metering Pumps).

## N.A.T.O. COMMON INFRASTRUCTURE.

## SLICE VI.

## NAVAL BASE INSTALLATIONS.

Final notice is hereby given that INTERNATIONAL COMPETITIVE BIDS will be invited on or about the 31st March, 1961, for the SUPPLY, INSTALLATION and SETTING to WORK at a depot on the West Coast of Scotland of Two MOTOR-DRIVEN FIRE PUMPS, each capable of delivering 500 gallons per minute at 150 p.s.i.

The approx. cost of the contract is £3,400. The work will be carried out as one contract, which will be undertaken as a sub-contract within the framework of the main contract for the construction of the depot.

It should be noted that the importation of labour from sources outside the United Kingdom may be subject to restriction and that permission could, in any case, only be given on an undertaking that the contractor would pay rates of wages and observe hours and conditions of labour not less favourable than those established for U.K. labour for the trade or industry in the same area.

The closing date for the receipt of bids will be 1st MAY, 1961.

Firms wishing to bid must formally notify their desire by application to the address below by 31st JANUARY, 1961.

Inquiries regarding bidding should be addressed to Director-General, Navy Works, ADMIRALTY, Chamberlain Way, Pinner, Middlesex, England, quoting Reference N.A.T.O. C.I. Job No. 3 (Sub-contract Fire Pumps).

## N.A.T.O. COMMON INFRASTRUCTURE.

## SLICE VI.

## NAVAL BASE INSTALLATIONS.

Final notice is hereby given that INTERNATIONAL COMPETITIVE BIDS will be invited on or about the 31st March, 1961, for the SUPPLY, INSTALLATION and SETTING to WORK at a depot on the West Coast of Scotland of One Oil-fired DESTRUCTOR FURNACE.

The approx. cost of the contract is £1,200. The work will be carried out as one contract, which will be undertaken as a sub-contract within the framework of the main contract for the construction of the depot.

It should be noted that the importation of labour from sources outside the United Kingdom may be subject to restriction and that permission could, in any case, only be given on an undertaking that the contractor would pay rates of wages and observe hours and conditions of labour not less favourable than those established for U.K. labour for the trade or industry in the same area.

The closing date for the receipt of bids will be 1st MAY, 1961.

Firms wishing to bid must formally notify their desire by application to the address below by 31st JANUARY, 1961.

Inquiries regarding bidding should be addressed to Director-General, Navy Works, ADMIRALTY, Chamberlain Way, Pinner, Middlesex, England, quoting Reference N.A.T.O. C.I. Job No. 3 (Sub-contract Destructor Furnace).

## BOROUGH OF ELLESMERE PORT.

## CONTRACT NO. 303.

## 106 HOUSES AND 23 BRICK GARAGES.

TENDERS are invited for the CONSTRUCTION of 106 HOUSES and 23 BRICK GARAGES, NORTH WHITBY HOUSING ESTATE, PART IV, Ellesmere Port, including all necessary ancillary works.

Contract documents will be obtainable from the Borough Engineer and Surveyor, Queen Street, Ellesmere Port, Cheshire, on the 9th January, 1961. Sealed Tenders, in the plain official envelope provided, must reach me by not later than 5 p.m. on MONDAY, the 30th January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

R. J. BERNIE, Town Clerk.

Municipal Offices,  
Ellesmere Port,  
Cheshire.

## BOROUGH OF ELLESMERE PORT.

## CONTRACT NO. 304.

## 13 TRADITIONAL HOUSES.

TENDERS are invited for the CONSTRUCTION of 13 TRADITIONAL HOUSES on the NORTH WHITBY ESTATE, PART VI, including all necessary ancillary works.

Contract documents will be obtainable from the Borough Engineer and Surveyor, Queen Street, Ellesmere Port, Cheshire, on the 9th January, 1961.

Sealed Tenders, in the plain official envelope provided, must reach me by not later than 5 p.m. on MONDAY, the 30th January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

R. J. BERNIE, Town Clerk.

Municipal Offices,  
Ellesmere Port,  
Cheshire.

## CONTRACTS

## N.A.T.O. COMMON INFRASTRUCTURE.

## SLICE VI.

## NAVAL BASE INSTALLATIONS.

Final notice is hereby given that INTERNATIONAL COMPETITIVE BIDS will be invited on or about the 31st March, 1961, for the SUPPLY, INSTALLATION and SETTING to WORK at a depot on the West Coast of Scotland of One DUST EXTRACTION PLANT and CYCLONE for a JOINERS' SHOP.

The approx. cost of the contract is £560. The work will be carried out as one contract, which will be undertaken as a sub-contract within the framework of the main contract for the construction of the depot.

It should be noted that the importation of labour from sources outside the United Kingdom may be subject to restriction and that permission could, in any case, only be given on an undertaking that the contractor would pay rates of wages and observe hours and conditions of labour not less favourable than those established for U.K. labour for the trade or industry in the same area.

The closing date for the receipt of bids will be 1st MAY, 1961.

Firms wishing to bid must formally notify their desire by application to the address below by 31st JANUARY, 1961.

Inquiries regarding bidding should be addressed to Director-General, Navy Works, ADMIRALTY, Chamberlain Way, Pinner, Middlesex, England, quoting Reference N.A.T.O. C.I. Job No. 3 (Sub-contract Dust Extraction Plant).

## BOROUGH OF WIMBLEDON.

## ANNUAL SUPPLY OF MATERIALS.

TENDERS are invited for the SUPPLY of all or any of the FOLLOWING MATERIALS for the 12 months commencing 1st April, 1961:

- (1) Salt Glazed Stoneware Pipes and Fittings.
- (2) Concrete Paving Slabs.
- (3) Aggregates, Sands and Grit.
- (4) Cement.
- (5) Lime.
- (6) Cold Bitumen Emulsion.
- (7) Granite Chippings.
- (8) Tarmacadam.
- (9) Fine Bituminous Cold Asphalt.

Forms of Tender and Specification may be obtained not later than 26th JANUARY, 1961, on written application to the BOROUGH ENGINEER, Town Hall, Wimbledon, S.W.19.

## CITY OF BIRMINGHAM.

## TO BUILDING CONTRACTORS.

CONTRACT 718-8 FOUR-STOREY DWELLINGS AND 1 SHOP-POOL FARM ESTATE, KINGS

NORTON.

CONTRACT 725-11 TWO-STOREY DWELLINGS-ADAMS HILL, BARTLEY GREEN.

CONTRACT 733-12 THREE-STOREY DWELLINGS-BUNBURY ROAD ESTATE, NORTFIELD.

CONTRACT 742-2 FOUR-STOREY DWELLINGS AND 1 SHOP-DELANDS ROAD, RUBEY.

The HOUSEBUILDING COMMITTEE invite TENDERS for the ERECTION of the ABOVE.

Bills of Quantities and Forms of Tender will be forwarded on payment of £2.25, for each Contract at the Office of the SHEPPARD FIDLER, City Architect, Civic Centre, Birmingham, 1, to whom all cheques should be made payable. Applications should be made by 10th JANUARY, 1961. Conditions of Contract (which include the usual Fair Wages and Conditions of Labour Clause) may be seen at the City Architect's Office during normal working hours.

The deposits will be returned on receipt of bona-fide Tenders or of inability to tender, together with the return of the documents not later than three days before the date for receipt of Tenders. Tenders, enclosed in the envelopes provided for the purpose, must be sealed and delivered to the Town Clerk's Office (Room No. B.31), Council House, Birmingham, 1, not later than 12 Noon on FRIDAY, the 10th February, 1961. Tenders received after that time will be rejected.

The Committee do not bind themselves to accept the lowest or any Tender.

F. H. PARKINSON, Town Clerk.

Council House,  
Birmingham, 1.

## BULLINGDON RURAL DISTRICT COUNCIL.

## CONSTRUCTION OF RELIEF SEWERS AT WHEATLEY AND WATLINGTON, OXON.

The Council are about to invite TENDERS for the CONSTRUCTION of 12 in. diameter RELIEF SEWERS, including Manholes and other ancillary Works, in the villages of WHEATLEY and WATLINGTON, OXON.

Approximate length of Sewer to be Laid at Wheatley, and 1,300yd., at Watlington. Contractors wishing to Tender for this work should send their names to the Council Engineer and Surveyor, MR J. E. BUSFIELD, at the under-mentioned address by not later than the 28th JANUARY, 1961.

L. C. WORT, Clerk of the Council.

Council Offices,  
76 Banbury Road,  
Oxford.

## RUGBY RURAL DISTRICT COUNCIL.

## FRANKTON SEWERAGE.

TENDERS are invited from experienced contractors for the LAYING of about 1,900yd. of 9 in. and 6 in. dia. SEWERS, the CONSTRUCTION of a SEWAGE PUMPING STATION, and the Laying of about 700yd. of 4 in. dia. Pumping Main, together with Manholes and House Connections, in the Parish of Frankton. The Contract will also include the Building of a small Sludge Pumping Station, the Renovation of existing Units and sundry Siteworks at the existing Sewage Disposal Works near Birdingbury Hostel.

Drawings may be seen at the Offices of the Council's Consulting Engineers, MESSRS. PICK, EVERARD, KEAY AND GIMSON, 6 Millstone Lane, Leicester, from whom the Specification and Bill of Quantities may be obtained on payment of a deposit of Five Guineas which will be refunded on receipt of a bona-fide Tender and the return to the Engineers of documents supplied.

Tenders, in the envelope provided, are to be delivered to the undersigned not later than 10 o'clock in the Forenoon of MONDAY, the 23rd January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

H. A. WILDE, Clerk of the Council.

Council Offices,  
24 Warwick Street,  
Rugby,

Warwickshire.

22nd December, 1960.

## CONTRACTS

## COUNTY BOROUGH OF DUDLEY.

## FOREST ROAD FLOOD RELIEF SCHEME.

Applications to TENDER are invited for the ABOVE CONTRACT. The Work comprises Excavation for, and Provision of, 50 lin. yd. of 36 in. Surface Water Sewer and 70 lin. yd. of Open Channel.

Applications for Tender documents should be addressed to the Borough Engineer, The Council House, Dudley, Worcestershire, accompanied by a deposit of £2.25, which will be returned upon receipt of a bona-fide Tender not subsequently withdrawn and the return of the documents.

The latest date for receipt of applications is FRIDAY, 20th January, 1961, and Tender documents will be forwarded as soon as possible after that date.

P. D. WADSWORTH, Town Clerk.

The Council House,  
Dudley,  
Worcs.

23rd December, 1960.

## BOROUGH OF BRIDPORT.

## CAFE ROYAL EXTENSION.

Firms wishing to TENDER for THIS WORK are invited to communicate as soon as possible with MESSRS. LAMBERT AND OLIVER, Architects, of 35 South Street, Bridport, who are acting for the Borough Council.

Quantities will be ready for dispatch on or about 7th January, 1961, and Drawings may be inspected at the Architects' Office at any time after that date.

F. C. M. FORWARD, Town Clerk.

Bridport,

26th December, 1960.

## FARNBOROUGH URBAN DISTRICT COUNCIL.

## TENDERS FOR MATERIALS, HIRE OF PLANT, ETC.

TENDERS are invited for the FOLLOWING MATERIALS for a period of two years from the 1st April, 1961, to 31st March, 1963:-

- (1) Bituminous and Tared Macadam and Cold Asphalts and Laying by Barber-Greene Finishing Machine.
- (2) Bituminous Paving Materials for Footpaths.
- (3) Asphaltic Bitumen and Cold Emulsions and Spreading by Pressure Tank.
- (4) Tar and Tar Spraying by Pressure Tank.
- (5) Granite Chippings.
- (6) Limestone and Quartzite Chippings.
- (7) Concrete Pipes and Concrete Gullies.
- (8) Stoneware Pipes.
- (9) Concrete Kerbs and Paving Slabs.
- (10) Petrol and Diesel Fuel Oil.
- (11) Brooms.
- (12) Hired Haulage and Mechanical Loaders.
- (13) Carriageway Markings (White Lines).
- (14) Coal and Coke.

Forms of Tender, which must be completed, may be obtained from the Engineer and Surveyor, Municipal Offices, Farnborough, Hants., upon receipt of a stamped addressed envelope, stating schedules required. Endorsed Tenders to be sent, in the envelope provided, to the undersigned not later than 12 Noon, WEDNESDAY, the 25th January, 1961.

All materials quoted for are to be as far as possible British.

A rise and fall clause is to be included in all Tenders.

The Council do not bind themselves to accept the lowest or any Tender.

D. STUART JONES, Clerk of the Council.

## CRANBROOK RURAL DISTRICT COUNCIL.

## MAIN DRAINAGE OF SANDHURST.

## C26/6 CONTRACT 2.

## TO CIVIL ENGINEERING AND PUBLIC WORKS CONTRACTORS.

The Cranbrook Rural District Council invite TENDERS for the CONSTRUCTION of approximately THREE MILES of small dia. of SEWERS and RISING MAINS, the CONSTRUCTION of TWO SEWAGE PUMPING STATIONS, a SEWAGE DISPOSAL WORKS, and other ancillary Work.

Plans may be inspected at the Council Offices, Cranbrook, and Particulars and Specifications may be obtained, and Plans may be inspected at the offices of the Council's Consulting Engineers, MESSRS. HOWARD HUMPHREYS AND SONS, West Street, Epsom, Surrey, on and from Monday, 9th January, 1961, until Friday, 27th January, 1961, between the hours of 10 a.m. and 4 p.m., upon payment of a cheque (made payable to the Rural District Council) for Three Guineas, which deposit, after the Council has reached a decision, will be returned to each contractor who has submitted a bona-fide Tender which has not subsequently been withdrawn.

Prints of the Contract Drawings can be obtained on loan from the Consulting Engineers on payment of £1 7s. 6d. All prints so supplied are to be returned. The contractor must have had considerable experience in similar works and be prepared to furnish good and approved security for the due execution of the work.

Tenders are to be on the official form and are to be delivered to the undersigned in sealed envelopes endorsed "Tender for Main Drainage of Sandhurst (C26/6 Contract 2)," but bearing no name or other mark indicating the sender, not later than Noon on FRIDAY, 3rd February, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

P. G. BANFIELD, Clerk of the Council.

Council Offices,  
Hill House,  
Cranbrook,  
Kent.

December, 1960.

## NORTH EAST LINCOLNSHIRE WATER BOARD.

## 6 IN. DIA. MAIN-NETTLETON GAP TO FAR FARM.

## CONTRACT C3 1.

TENDERS are invited from experienced contractors for the SUPPLY and LAYING of approx. 2,000yd. of 6 in. dia. SPUN-IRON PIPES across country approx. two miles west of Calstow, in the Rural District of Calstow.

Applications for Tender documents should be made to the undersigned, to whom completed Tenders should be returned not later than First Post on TUESDAY, the 17th January.

The Board do not bind themselves to accept the lowest or any Tender.

CYRIL COOPER, Engineer and Manager.

Town Hall Square,  
Grimsby, Lincs.

22nd December, 1960.



## CONTRACTS

## HERTFORDSHIRE COUNTY COUNCIL

## HIGHWAYS DEPARTMENT.

## WIDENING OF BRIDGE OVER RIVER RIB AT CHIPPING, ON TRUNK ROAD, A.10.

TENDERS are invited for the WIDENING and STRENGTHENING of a 14ft. span BRICK ARCH BRIDGE over the RIVER RIB.

The works comprise the Demolition of the existing Brick Parapets; Extension of the existing Abutments by approx. 4ft. on either side of the existing structure, together with New Concrete Wing Walls and the Widening of the existing Deck by means of Precast Concrete Beams to provide Two Footpaths over the bridge. Strengthening of the Arch is to be achieved by means of a Concrete Relieving Arch.

The Roadway will consist of Laying of approx. 470 sq. yd. of Asphalt Surfacing, together with approx. 180 lin. yd. of Kerbing.

Tender documents may be obtained from, and Drawings inspected, during normal working hours, at the Office of the County Surveyor, County Hall, Hertford, on or after Monday, 9th January, 1961.

Tenders, endorsed "Widening of Chipping Bridge," are to be returned to the CLERK OF THE COUNTY COUNCIL not later than WEDNESDAY, 8th February, 1961.

The County Council does not bind itself to accept the lowest or any Tender.

County Hall, Hertford.

## BOROUGH OF ILFORD.

## CLEARING OF SILT FROM SOUTH PARK LAKE AND CONSTRUCTION OF DETRITUS LAGOON, WITH ANCILLARY WORKS.

The CORPORATION invites TENDERS for the CLEARING OF SILT from the South Park Lake, and the BUILDING OF A DETRITUS LAGOON of Mass Concrete Construction, together with the Fitting of Oil-decanting Weir Penstock with 50yd. of 6in. Earthenware Pipe and Grease Intercepting Chamber.

Conditions of Contract and Drawings may be inspected upon application to the Borough Engineer, Town Hall, Ilford, from whom the Special Conditions, Specification, Bills of Quantities and Form of Tender may be obtained on payment of a deposit of Two Guineas which is returnable on receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, in a plain envelope bearing no name indicating the tenderer, and endorsed "Tender for South Park Lake Silt Removal," must be delivered to the TOWN CLERK, Town Hall, Ilford, not later than 4 p.m. on the 24th January, 1961.

The Corporation does not bind itself to accept the lowest or any Tender.

## URBAN DISTRICT COUNCIL OF MARPLE.

## ERECTION OF HOMEVILLE TRADITIONAL HOUSES AND FLATS.

- (1) ERNOCROFT ROAD SITE—12 FLATS.
- (2) COTE GREEN ROAD SITE—2 HOUSES (1 PAIR OF 3-BEDROOM).

FIXED-PRICE TENDERS are invited for the ERECTION OF THE FOLLOWING:

- (1) 12 Flats at Ernicroft Road, Marple Bridge; and
- (2) 1 Pair of 3-Bedroom Houses at Cote Green Road, Marple Bridge.

Full details and Forms of Tender can be obtained from the Corporation on payment of £2 2s. deposit which will be refunded on submission of a bona-fide Tender.

Tenders, in plain sealed envelopes endorsed "Tender—Erection of Council Houses," must be delivered to the undersigned not later than 30th JANUARY, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

L. GREENALL,  
Clerk of the Council.

Council Offices,  
Marple,  
Cheshire.  
4th January, 1961.

## FAREHAM URBAN DISTRICT COUNCIL.

## PRIVATE STREET WORKS.

TENDERS are invited for MAKING-UP THE FOLLOWING PRIVATE STREETS at FAREHAM: Holly Grove, Potters Avenue, Derlyn Road and The Drive (off Peak Lane) (total length approx. 530yd.), involving Construction of Surface Water Drainage, Kerb and Channel, Carriageway Strengthening and Shaping with Tarmacadam Surfacing, Footpaths Surfaced with Tarmacadam, Verges, and other incidental works.

Plans may be inspected and Tender documents obtained from Engineer and Surveyor, Westbury Manor, West Street, Fareham, Hants., on payment of deposit of £2 which is refundable on receipt of bona-fide Tender.

Form of Tender (in envelope provided) to me by Noon on 26th JANUARY, 1961, other documents to be returned to Engineer and Surveyor by same date. The Council do not bind themselves to accept the lowest or any Tender.

B. W. RANDS,  
Clerk to the Council.

Merton,  
5 Grove Road,  
Fareham, Hants.

## HAMBLEDON RURAL DISTRICT COUNCIL.

## REGISTRATION OF SELECTED CONTRACTORS.

Applications are invited from the following classes of firms for registration by the Council on a proposed List of Selected Contractors who would, when accepted for registration, be given an opportunity to TENDER in appropriate cases for any future Council projects of the categories described:

- (1) Builders for House Construction.
- (2) Builders for House Maintenance.
- (3) Civil Engineering contractors capable of carrying out Village Sewerage and or Sewage Disposal Schemes.
- (4) Civil Engineering contractors capable of the Estate Development on housing sites.
- (5) Small general contractors for minor engineering works.
- (6) Decorators and painting contractors for External Painting of Council dwellings.

Further details may be obtained from the undersigned, to whom applications should be submitted not later than 30th JANUARY, 1961.

Dated this 29th day of December, 1960.

ROBIN J. GARLAND,  
Clerk of the Council.

Council Offices,  
Bury Fields,  
Guildford,  
Surrey.

## CONTRACTS

## BOROUGH OF SCUNTHORPE.

## HIGHWAYS MATERIALS AND WORKS.

TENDERS are invited for the UNDERMENTIONED ITEMS for the period ending 31st March, 1962:—

- (1) Castings.
- (2) Cement.
- (3) Scavenger Brushes, Mechanical Sweeper Reels.
- (4) Asphalt and Bituminous Topping.
- (5) Tarred Slag.
- (6) Dry Slag.
- (7) Concrete Flags, Kerbs, etc.
- (8) Small Tools.
- (9) Soiled Salt.
- (10) Surfacing of Carriageways (Barber-Greene Finisher).
- (11) Heating and Planing of Carriageways.
- (12) Surface Dressing of Carriageways.
- (13) White Line Painting.

Applications for Tender Forms and Specifications, stating the tender number, should be addressed to Mr. J. BOWYER, A.M.I.C.E., Borough Surveyor, Laneham Street, Scunthorpe.

Completed Tenders, enclosed in a plain sealed envelope, endorsed "Highways Tender," and addressed to the TOWN CLERK, Municipal Offices, 34 High Street, Scunthorpe, must be received by First Post, 14th JANUARY, 1961.

## BOROUGH OF STOUBRIDGE.

## SURFACE WATER CULVERT—SWAN STREET TO RIVER STOUR.

Contractors possessing the necessary experience and plant, and wishing to TENDER for the ABOVE SCHEME, are invited to submit their names to the undersigned by the 21st JANUARY, 1961.

The work consists of approx. 470 lin. yd. of 57in. internal dia. and 190 lin. yd. 54in. internal dia. Reinforced Concrete Pipes (short length in heading), together with Outfall Spillway, 20 lin. yd. Reinforced Concrete Box Culvert, and Brick Manholes.

Applications must be accompanied by a list of schemes of a similar nature that have recently been carried out by the contractor.

It is anticipated that copies of the Form of Tender and the Bill of Quantities will be dispatched to selected Tenderers on or about 27th January, 1961, and a date will then be specified by which the Tender must be returned to the Town Clerk, Council House, Stourbridge.

Drawings may be inspected at the Office of the Borough Engineer at the Council House, Stourbridge. H. W. MORRIS, B.Sc.(Eng.), A.M.I.C.E., Borough Engineer and Surveyor.

Council House, Stourbridge.  
29th December, 1960.

## CHERTSEY URBAN DISTRICT COUNCIL.

## WINDSOR STREET AND STAINES LANE, A.320.

FIXED-PRICE TENDERS are invited for WIDENING and REALIGNING of the ABOVE-NAMED ROUTE for approx. 1,600 lin. yd. between Colonel's Lane and the District Boundary.

The works include Excavation, Filling, Surface Water Drainage, Road Filling, in Lean-Mix Concrete, Hot Rolled Asphalt and Kerbing, together with incidental and ancillary works.

The Drawings may be seen during normal office hours at the Office of the Engineer and Surveyor, The Orchard, Staines Lane, Chertsey, from whom copies of the documents may be obtained on deposit of £2 2s., which will be returned on receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, sealed and endorsed, must be delivered to the undersigned by Noon on FRIDAY, 20th January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

L. W. WAY,  
Clerk of the Council.

Council Offices,  
Guildford Street,  
Chertsey.  
19th December, 1960.

## RURAL DISTRICT COUNCIL OF TENDRING.

## WESTERN AREA SEWERAGE SCHEME.

TENDERS, on a Fixed-price Basis, are invited from experienced public works contractors for the CONSTRUCTION of approx. 19,500yd. of 6in. and 9in. STONEWARE SEWERS; 6,500yd. of 4in., 6in. and 7in. Rising Main; 283 Manholes; Seven Pumping Stations, and a Sewage Treatment Works consisting of Screening Chambers, Settlement Tanks, Percolating Filters, Humus Tanks, Digestion Tanks, Sludge Beds, and ancillary works.

Form of Tender, Specification, Bills of Quantities and Drawings may be obtained on or after 16th January, 1961, on payment of a deposit of Two Guineas, which will be returned on receipt of a bona-fide Tender and the return of all documents.

Tenders, in plain sealed envelopes endorsed "Western Area Sewerage Scheme," must be returned to the undersigned not later than First Post on MONDAY, 27th February, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

W. S. LAING, A.M.I.Mun.E.,  
Engineer and Surveyor.

Council Offices,  
Weely,  
Near Clacton-on-Sea.

## WELTON RURAL DISTRICT COUNCIL.

## WELTON AND DUNHOLME SEWERAGE SCHEME.

## CONTRACT NO. 4—HOUSE CONNECTIONS IN PRIVATE LANDS.

TENDERS are invited for the LAYING of approx. 4,300 lin. yd. of 4in. dia. STONEWARE HOUSE CONNECTIONS IN PRIVATE LANDS, together with Inspection Chambers and Reinstatement, at Welton and Dunholme, in the Welton Rural District of Lincolnshire.

Contractors wishing to tender for these works should apply for the documents to the Council's Consulting Engineers, JOHN H. HAISTE AND PARTNERS, Belmont House, 20 Wood Lane, Headingley, Leeds, 6, enclosing a sealed cheque for value Three Guineas made payable to the Welton R.D.C., such deposit to be refunded upon receipt of a bona-fide Tender and the return of all documents.

Tenders, with the Bills of Quantities priced in Ink, are to be submitted to the undersigned not later than 12 Noon on the 25th JANUARY, 1961.

The Council do not bind themselves to accept the lowest or any Tender they may receive.

L. H. KING,  
Clerk of the Council.

Council Offices,  
31 Clasketgate,  
Lincoln.

## CONTRACTS

## METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

## NEW SOUTH WALES.

## LONG BAY SEWAGE TREATMENT WORKS.

## CONTRACT NO. 3467-S.

TENDERS are invited for the MANUFACTURE, SUPPLY, DELIVERY AND INITIAL MAINTENANCE of 26 CAST-IRON PENSTOCKS complete with 16 Cast-iron Supporting Columns, Electric Motor Drives and Starting Equipment.

Tender documents, including the Specification and Drawings, can be obtained on application to the New South Wales Government Offices, 56 Strand, London, W.C.2.

Tenders must be submitted to the METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD, 341 Pitt Street, Sydney, New South Wales, Australia, by 2 p.m. on TUESDAY, 14th February, 1961.

## BOROUGH OF RAWTENSTALL.

## TRUNK ROAD, A.56—BURNLEY ROAD, LOVECLOUGH.

## RESURFACING AND RECONSTRUCTION.

TENDERS are invited for the RESHAPING of the ROAD SURFACE in 2½in. Graded Bituminous Macadam, and Providing and Laying a Two-layer Hot Rolled Asphalt Surface. Approx. area of the work is 2.310 sq. yd.

Contract documents may be obtained from the Borough Engineer and Surveyor, Town Hall, Rawten-stall, Rossendale, Lancs.

Sealed Tenders in the envelope provided, must be returned to the undersigned not later than 12 Noon on FRIDAY, the 27th January, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

COLIN CAMPBELL,  
Town Clerk.

Town Hall,  
Rawtenstall,  
Rossendale.  
30th December, 1960.

## BOROUGH OF ENFIELD.

## ANNUAL CONTRACTS FOR THE SUPPLY OF MATERIALS, ETC.

The CORPORATION invites TENDERS for the SUPPLY of the FOLLOWING ITEMS for the year ending March 31st, 1962:—

- (a) Tarred Macadam (Slag or Granite Aggregates).
- (b) Cold Asphalt, Asphalt Macadam and Bituminous Tack Coat.
- (c) Red Granite Chippings.
- (d) Shingle.
- (e) Pit Sand.
- (f) Tools, etc.
- (g) Concrete Aggregate and Washed Sand.
- (h) Cement.
- (i) Brooms and Brushes.
- (j) Precast Concrete Flags.
- (k) Paint and Painters' Sundries.
- (l) Paint and Distemper Brushes.
- (m) Bitumen—Surface Spraying.
- (n) Natural Stone Kerb.
- (o) Dustbins, Galvanised Cisterns and Tanks.
- (p) Manhole Covers and Frames, Gully Grids and Frames.
- (r) Precast Chippings.

Applications for Specifications and Forms of Tender should indicate the specification required as lettered above, and should be accompanied by a stamped addressed envelope, and addressed to the Borough Engineer, 7 Little Park Gardens, Enfield.

The Tenders must reach the undersigned on or before the 6th FEBRUARY, 1961, and no Tender will be received except in a plain sealed envelope, which must not bear any name or mark identifying the tender.

The Corporation does not bind itself to accept the lowest or any Tender.

CYRIL E. C. R. PLATTEN,  
Town Clerk.

Public Offices,  
Enfield.  
23rd December, 1960.

## CITY OF BIRMINGHAM.

## TO SURFACE DRESSING CONTRACTORS.

The Public Works Committee invite TENDERS on a FIXED-PRICE BASIS for a MEASURE AND VALUE CONTRACT for the SURFACE DRESSING, in Tar and Bitumen, of VARIOUS ROADS in the CITY during 1961.

Copies of the Specification, Bills of Quantities and Forms of Tender may be obtained on payment of £2 2s. at the office of SIR HERBERT J. MANZONI, City Engineer and Surveyor, Civic Centre, Birmingham, 1, to whom all cheques should be made payable. The deposit will be returned on receipt of a bona-fide Tender.

Tenders, enclosed in the envelopes provided for the purpose, must be sealed and delivered at the Town Clerk's Office (Room 821), Council House, Birmingham, not later than 12 Noon on MONDAY, 20th February, 1961, when they will be opened.

Tenders received after that time will be rejected.

The Committee do not bind themselves to accept the lowest or any Tender.

T. H. PARKINSON,  
Town Clerk.

Council House,  
Birmingham, 1.

## CITY OF CHESTER.

## PLAYING FIELDS—BLACON AVENUE.

TENDERS, on a FIXED-PRICE BASIS, are invited for the SITE CLEARANCE, LEVELLING, DRAINAGE, PREPARATION, SOWING, etc., of approximately 11½ ACRES of PLAYING FIELDS on the ABOVE SITE.

Tender documents may be obtained from the City Engineer and Surveyor, 49 Northgate Street, Chester, and must be returned to the TOWN CLERK, Town Hall, Chester, in a sealed envelope marked "Tender—Playing Fields, Blacon Avenue," not later than 7th FEBRUARY, 1961.

## CITY OF CHESTER.

## PLAYING FIELDS, ST. THOMAS'S SCHOOL, WALPOLE STREET.

TENDERS, on a FIXED-PRICE BASIS, are invited for the SITE CLEARANCE, LEVELLING, DRAINAGE, PREPARATION, SOWING, etc., of approximately 2½ ACRES of PLAYING FIELDS on the ABOVE SITE.

Tender documents may be obtained from the City Engineer and Surveyor, 49 Northgate Street, Chester, and must be returned to the TOWN CLERK, Town Hall, Chester, in a sealed envelope marked "Tender—St. Thomas's School Playing Field," not later than 7th FEBRUARY, 1961.

## CONTRACTS

## COUNTY COUNCIL OF ESSEX.

CHELMSFORD MOULSHAM COUNTY SECONDARY SCHOOL.  
TARPAVING.

Contractors wishing to submit a FIRM-PRICE TENDER for the ABOVE should forward their names, from which a panel will be chosen and provided with Tender documents.

The work consists of Tarpaving and ancillary works, estimated cost £2,900.

Applications to reach the undersigned not later than 14th JANUARY, 1961.

H. CONOLLY, C.B.E., F.R.I.B.A.,  
County Architect.

County Hall,  
Chelmsford.

## COUNTY BOROUGH OF BOURNEMOUTH.

The BOURNEMOUTH TOWN COUNCIL invites TENDERS for the FOLLOWING for the year ending the 31st March, 1962:—

- (1) Lorry Hire.
- (2) Stone Chippings.
- (3) Bituminous Cold Emulsions.
- (4) Tarrad and Bituminous Macadam.
- (5) Tar for Surface Dressing.
- (6) Coarse and Fine Binding Gravel and Frost Grit, etc.
- (7) Supplying, Laying and Rolling Asphalt.
- (8) Washed Gravel, Concrete Aggregate and Sand.
- (9) Cement, etc.
- (10) Oils, etc.
- (11) Precast Concrete Products.
- (12) Rebuilding Mechanical Sweeper Brushes.
- (13) Manhole Covers and Frames, etc.
- (14) Concrete Pipes, Manholes and Gullies.

Particulars and Forms of Tender, obtainable from the Borough Engineer, Town Hall, to reach me by the 31st JANUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

A. LINDSAY CLEGG,  
Town Clerk.

Bournemouth.

## BOROUGH OF ACCRINGTON.

## HIGHWAYS DEPARTMENT.

## ANNUAL TENDERS, 1961-62.

TENDERS are invited for the SUPPLY and DELIVERY of the FOLLOWING MATERIALS for the year ending 31st March, 1962:—

- Bitumen Macadam.
- Fine Cold Asphalt.
- Tars and Bitumen Emulsions.
- Manhole and Gully Castings.
- Cement.
- Concrete Flags and Kerbs and Edgings.
- Coarse Aggregate for Concrete.
- Fine Aggregate and Sand.
- Roadstone Chippings.
- Salt Glazed Ware Pipes, etc.
- Chain Link Fencing (Plastic Covered).
- Chestnut Fencing.

Specifications and official Forms of Tender may be obtained from B. HARTLEY, B.Sc.(Eng.), A.M.I.C.E., A.M.I.Mun.E., Borough Engineer and Surveyor, 44 Union Street, Accrington.

Tenders, in plain sealed envelopes, and endorsed "Tender for —" (as the case may be), must be sent so as to reach me not later than Noon on SATURDAY, the 28th January, 1961.

JACK GARTSIDE,  
Town Clerk.

Town Hall,  
Accrington.

## BOROUGH OF BUXTON.

TENDERS are invited for the SUPPLY of the FOLLOWING MATERIALS for the 12 months ending March 31st, 1962:—

- Schedule
- No.
  - (1) Concrete Flags, Channels and Kerbs.
  - (2) Broken Stone and Chippings, Tarrad Stone and Lump Lime.
  - (3) Bituminous Limestone, Basalt, Slag and Grit.
  - (4) Fine Cold Asphalt.
  - (5) Portland Cement.
  - (6) Street Ironwork (Local Founders).
  - (7) Brooms.
  - (8) Bituminous Binders.
  - (9) Lubricating Oils.
  - (10) Motor Tyres.

Forms of Tender may be obtained on application to the undersigned. Intending contractors must state the number of schedules required.

The successful contractor will be required to observe the Fair Wages Clause adopted by the Corporation. Tenders, sealed and endorsed "Tender for —" to be sent to this Office not later than MONDAY, the 23rd January, 1961.

No Tender will be considered unless received in the official envelope provided, which must not bear any mark or name thereon indicating the sender. The Corporation does not bind themselves to accept the lowest or any Tender.

A. C. W. RYLAND, A.M.I.C.E.,  
Borough Engineer.

Borough Engineer's Office,  
Town Hall,  
Buxton.

29th December, 1960.

## ENNERDALE RURAL DISTRICT COUNCIL.

## SEWERAGE—CONTRACT NO. 7.

TENDERS are invited from experienced contractors on a firm-price basis for the CONSTRUCTION of the FOLLOWING WORKS:—

- (i) Storm Water Tanks at Picket How, Egremont.
- (ii) Storm Overflow with Sewer Diversion at Beckermeth.
- (iii) 21in. dia. Sea Outfall and Sewer, partly in tunnel, at Braystones.

Copies of the Specification, Bill of Quantities and Form of Tender may be obtained from the Engineers, Messrs. ROFE AND RAFFETY, 9 Brewer's Green, Buckingham Gate, Westminster, London, S.W.1, upon payment (by cheque only) of £3 3s. deposit, which will be repaid upon receipt of a bona-fide Tender and the return of all documents and Drawings supplied. The Contract Drawings may be inspected at the Office of the Engineers as above, or at the Offices of the Council's Engineer, Council Chambers, Cleator, Cumberland.

Tenders, in plain sealed envelopes, endorsed "Tender for Contract No. 7," to be sent to the undersigned not later than 12 Noon on 15th FEBRUARY, 1961. The Council does not bind itself to accept the lowest or any Tender.

JOHN BRADLEY,  
Clerk of the Council.

The Council Chambers,  
Cleator, Cumberland.

## CONTRACTS

## PEMBROKESHIRE COUNTY COUNCIL.

## ROADS AND BRIDGES DEPARTMENT.

ANNUAL TENDERS FOR ROAD MATERIALS, HAULAGE, TARMACADAM, TOOLS, PLANT, ETC., 1961-62.

TENDERS are invited for the SUPPLY of the UNDERMENTIONED ROAD MATERIALS and SERVICES for the financial year ending the 31st March, 1962:—

- (1) (a) Supply of Broken Stone, Chippings, Tarmacadam, Bituminous Macadam, Open-textured Asphalt Carpet and Fine Asphalt at Quarries.
- (b) Haulage of above Road Materials from Quarries to Sites of Work.
- (2) Mechanical Haulage.
- (3) Road Rolling and Scarifying.
- (4) Concrete Kerbs, Channels, Paving Flags, etc.
- (5) Steam Coal.
- (6) Cold Bitumen Emulsion.
- (7) Hot Tar or Bitumen for Surface Dressing (including Application by Tank Sprayer).
- (8) Stoneware and Concrete Pipes.
- (9) Cement.
- (10) Cast-Iron Gully Gratings and Frames, Manhole and Footpath Covers, etc.
- (11) Hire of Drott Shovels, Bulldozers and Excavators.

Forms of Tenders may be obtained on application to the County Surveyor, County Offices, Haverfordwest, Pembrokeshire, and all Tenders must be submitted on the official forms.

Sealed Tenders, enclosed in a plain envelope, endorsed "Tender for —" but not bearing any name or mark indicating the sender, must be delivered to the Office of the undersigned not later than the First Post on FRIDAY, the 27th January, 1961. The Council reserve the right to divide any contract between two or more contractors, and do not bind themselves to accept the lowest or any Tender.

H. LOUIS UNDERWOOD,  
Clerk of the County Council.

County Offices,  
Haverfordwest,  
Pembrokeshire.

20th December, 1960.

## NORTHAMPTONSHIRE COUNTY COUNCIL.

## LONDON-HOLYHEAD TRUNK ROAD, A.45.

## NEWHAM GRANGE TO BURN WALLS IMPROVEMENT.

TENDERS are invited for the RECONSTRUCTION and IMPROVEMENT of approx. 1,000 lin. yd. of the ABOVE TRUNK ROAD between Weedon and Daventry.

The work will consist mainly of the Widening and Realignment of the Carriageway, together with the usual ancillary works.

Tender documents can be obtained from the County Surveyor, County Offices, Guildhall Road, Northampton, on deposit of a sum of £2 which will be returned receipt of a bona-fide Tender. Drawings may be examined at the County Surveyor's Office during normal office hours.

Tenders to be delivered to the undersigned not later than the 23rd JANUARY, 1961, in plain sealed envelopes endorsed "Tender for Improvement—Newham Grange."

J. ALAN TURNER,  
Clerk of the County Council.

County Hall,  
Northampton.

## COUNTY BOROUGH OF BURY.

## DEMOLITION WORKS.

TENDERS invited for DEMOLITION of BOILER HOUSE, BRICK CHIMNEY and BOUNDARY WALL at former TAR DISTILLERY, PROCTER STREET, Bury. Copies of Contract documents obtainable from Borough Engineer's Office, Town Hall, Bury, where Drawings may be inspected.

Tenders, in plain sealed envelopes endorsed "Demolition—Boiler House, etc.," must reach me by 16th JANUARY, 1961.

EDWARD S. SMITH,  
Town Clerk.

Town Hall,  
Bury.

29th December, 1960.

## BOGNOR REGIS URBAN DISTRICT COUNCIL.

## HIGHWAYS ACT, 1959.

## MEAD LANE (PART).

FIXED-PRICE TENDERS are invited for the MAKING-UP of part of MEAD LANE (60 yd. in length approx.), under the Code of 1892 contained in the Highways Act, 1959.

Tender documents may be obtained from the Engineer and Surveyor, Town Hall, Bognor Regis, on payment of a deposit of £2 2s. which will be returned upon the receipt of a bona-fide Tender and return of all documents.

Tenders, in plain sealed envelopes provided, bearing no mark or indication of the sender, endorsed "Mead Lane (Part)—Private Street Works," to be delivered to the undersigned not later than First Post on FRIDAY, the 3rd February, 1961.

The Council does not bind itself to accept the lowest or any Tender.

R. W. J. HILL,  
Clerk of the Council.

Town Hall,  
Bognor Regis.

## BOGNOR REGIS URBAN DISTRICT COUNCIL.

## HIGHWAYS ACT, 1959.

## FOUL SEWERING OF MANOR WAY AND TITHE BARN WAY.

TENDERS are invited for the LAYING of approx. 525 lin. yd. of 9in. dia. SPUN-IRON SEWERS, together with the Construction of Manholes and all incidental works, in Manor Way and Tithe Barn Way, on the Aldwick Bay Estate, Bognor Regis.

Form of Tender and other documents may be obtained from the Engineer and Surveyor on payment of a deposit of £2 2s., which will be returned on receipt of a bona-fide Tender and the return of all documents.

Tenders, in envelopes provided, bearing no mark or indication of the sender, endorsed "Aldwick Bay Estate Foul Sewering," should be delivered to the undersigned not later than First Post on MONDAY, the 6th February, 1961.

The Council does not undertake to accept the lowest or any Tender.

R. W. J. HILL,  
Clerk of the Council.

Town Hall,  
Bognor Regis.

December, 1960.

## CONTRACTS

## COUNTY BOROUGH OF HUDDERSFIELD.

The CORPORATION of HUDDERSFIELD invites TENDERS for the SUPPLY of the FOLLOWING MATERIALS for the 12 months ending 31st March, 1962:—

- Tender Form
- No.
  - (1) Granite Chippings.
  - (2) Stone Kerb.
  - (3) Pitching and Crushed Stone.
  - (4) Broken Limestone and Chippings.
  - (5) Tarmacadam.
  - (6) Bitumen Macadam.
  - (7) Washed Crushed Gravel, Washed Quartzite, Washed Sand and Building Sand.
  - (8) Steel Fabric for Concrete Reinforcement.
  - (9) Cement.
  - (10) Engineering Bricks and Common Bricks.
  - (11) Glazed Ware Pipes, Gullies and Fittings.
  - (12) Cast-Iron Materials.
  - (13) Scavenging Brushes and Brooms.
  - (14) Precast Concrete Flags and Precast Concrete Kerbs.
  - (15) Unreinforced and Reinforced Concrete Pipes, Tubes and Bends.
  - (16) Tar for Surface Dressing, Bitumen and Bituminous Emulsion.
  - (17) Electric Lamps (Tungsten Filament).
  - (18) Electric Lamps (Mercury Vapour and Sodium).
  - (19) Electric Cables.
  - (20) Gas Mantles.
  - (21) Fine Cold Asphalt and "Skim Coat" Material.
  - (22) Dense Tar Surfacing.
  - (23) Hot Rolled Asphalt.
  - (24) Ready Mixed Concrete.
  - (25) Premixed Waterbound Macadam.
  - (26) Planning Work Stone Kerb.

The successful tenderer will be required to execute a contract, the draft of which may be inspected at the Town Clerk's Office, Town Hall, between 10 and 4 o'clock.

Specifications and Forms of Tender may be obtained on application at the Offices of the Borough Engineer and Surveyor, High Street Buildings.

Tenders, appropriately endorsed, signed in the handwriting of the tenderer or his agent, and addressed "Town Clerk, Town Hall, Huddersfield," must reach me not later than 10 a.m. on MONDAY, 30th January, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

HARRY BANN,  
Town Clerk.

Town Hall,  
Huddersfield.

January, 1961.

## COUNTY BOROUGH OF ROCHDALE.

TENDERS will shortly be invited from selected contractors for the ERECTION of EXTENSIONS to MELLOR STREET "BUS GARAGE."

The work comprises some 33,000 sq. ft. of Prestressed Post-tensioned Shell Concrete Roofing, with ancillary building work.

Contractors wishing to be invited to tender should forward particulars of their organisation, together with the names and addresses of two referees, to BOROUGH SURVEYOR, Town Hall, Rochdale, by 13th JANUARY, 1961.

## CITY AND COUNTY OF BRISTOL.

## TENDERS FOR ROAD MATERIALS, ETC.

TENDERS are invited for SUPPLY, and where stated LAYING, of UNDERMENTIONED MATERIALS during 12 months 1st April, 1961, to 31st March, 1962:—

- Manhole Covers and Frames.
- Inspection Chamber Covers and Frames.
- Gully Gratings and Frames.
- Galvanised Malleable Step Irons.
- Precast Concrete Flags.
- Precast Concrete Kerbs.
- Sand.
- Sea-washed Gravel.
- Granite, Basalt, Slag or Quartzite Chippings.
- Tar and Bituminous Surface Dressings.
- Clean Stone (Concrete Aggregates, etc.).
- Bitumen Macadam.
- Bituminous Road Surfacing Mixtures (Supply and Laying).
- Fine Cold Asphalt.
- Fine Hot Asphalt (Footpaths) (Supply and Laying).
- Heating and Planning.
- Propane and Butane Gas.
- Mixed Concrete.
- Street Lighting Lanterns.

Forms of Tender, Specifications and Conditions from CITY ENGINEER AND PLANNING OFFICER, Cabot House, Deanery Road, Bristol, 1. Tenders to be submitted by 14th JANUARY, 1961. Lowest or any Tender not necessarily accepted.

## CITY OF NOTTINGHAM.

## WATER DEPARTMENT.

## NORMANTON NO. 2 BOOSTER PUMPING STATION.

TENDERS are invited for the MANUFACTURE, SUPPLY, ERECTION AND SETTING TO WORK of TWO CENTRIFUGAL PUMPS and Electric Motors, Switchgear, and other appurtenant work, at Normanton No. 2 Booster Station, Normanton-on-the-Wolds, near Nottingham.

General Conditions of Contract, Specification and Form of Tender may be obtained from MR. B. W. DAVIES, Engineer and General Manager, Water Department, Castle Boulevard, Nottingham, on payment of One Guinea, which will be returned in full on receipt of a bona-fide Tender not afterwards withdrawn, and the return of all documents.

Tenders, enclosed in an envelope endorsed "Tender for Electrically Driven Pumping Plant," to be delivered to me at the Guildhall, Nottingham, not later than Noon on MONDAY, the 20th February, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

T. J. OWEN,  
Town Clerk.

The Guildhall,  
Nottingham.

## MANCHESTER CORPORATION.

## WATERWORKS.

## CONTRACT M.D.2.

TENDERS are invited for the MANUFACTURE, SUPPLY, DELIVERY AND INSTALLATION of CLAY-TON BRIDGE, Manchester, of FIVE CENTRIFUGAL PUMPS, Electric Motors, Switchboard, Water Metering Gear, Pipes, Valves, Chlorination Plant, etc.

Tender Forms (returnable by 30th JANUARY, 1961), Specification, Conditions of Contract, etc., obtainable from the SECRETARY, Waterworks Office, Town Hall, Manchester, 2, upon payment of One Guinea deposit, to be refunded only on receipt of a bona-fide Tender.

## CONTRACTS

## COUNTY BOROUGH OF HASTINGS.

## PETROLEUM PRODUCTS.

TENDERS are invited for SUPPLIES of PETROL, FUEL OILS, LUBRICATING OILS, T.V.O., PARAFFIN, etc., and further particulars may be obtained from the Borough Engineer, 37 Wellington Square, Hastings.

Tenders, in plain sealed envelopes (bearing no name or mark indicating the sender), must be received by the undersigned not later than 10 a.m. on THURSDAY, 26th January, 1961.

The Corporation does not bind itself to accept the lowest or any Tender.

N. P. LESTER,

Town Hall,  
Hastings.

Town Clerk.

## CITY OF CHESTER.

## RECONSTRUCTION OF SEWAGE WORKS—STAGE I.

## PILING CONTRACT.

Applications are invited from suitably experienced contractors to be placed on the selected list of tenderers for the ABOVE CONTRACT.

The work will comprise approx. 230 18in. nominal dia., 35ft. long Bored Piles of design and construction to be in sandy, waterlogged ground and adjacent to existing buildings.

It is anticipated that work will start in April, 1961, and the Contract documents will be forwarded to the selected contractors on the completion of a subsoil investigation which is expected in mid-February, 1961.

Applications, giving comprehensive details of previous contracts of a similar nature, should be delivered not later than 20th JANUARY, 1961, to the CITY ENGINEER AND SURVEYOR, 49 Northgate Street, Chester, from whom further information may be obtained.

## FAREHAM URBAN DISTRICT COUNCIL.

## WESTERN WARDS MAIN DRAINAGE.

## BRANCH SEWER—STAGE I.

The Council invite TENDERS for the CONSTRUCTION of approx. 29,265 lin. yd. of 6in. to 15in. dia. STONEWARE, CONCRETE and SPUN-IRON PIPE SEWERS, together with the necessary Manholes, etc., and all appurtenant works.

Forms of Tender, Specification and Bills of Quantities may be obtained from the Office of the Council's Engineer and Surveyor, Westbury Manor, Fareham, Hants, or the Offices of the Consulting Engineers, Messrs. MM.Inst.C.E., 165 Westmorland Road, Newcastle upon Tyne, 4, upon payment of a deposit of Five Guineas which will be returned on receipt of a bona-fide Tender.

Drawings illustrating the works to be carried out may be inspected at the Office of the Council's Engineer and Surveyor, Westbury Manor, Fareham, Hants, or the Offices of the Consulting Engineers.

Tenders should be delivered to me, the undersigned, in a plain sealed envelope endorsed "Western Wards Main Drainage," not later than the 31st JANUARY, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

B. W. RANDS,

Clerk to the Council.

Merton,  
5 Grove Road,  
Fareham, Hants.

## STAINES URBAN DISTRICT COUNCIL.

## ANNUAL MAINTENANCE CONTRACT, 1961/62.

FIXED-PRICE TENDERS are invited for GENERAL ROAD MAINTENANCE and MINOR IMPROVEMENT WORKS throughout the District for the year commencing 1st April, 1961.

Copies of the Schedules, Form of Tender and Specification may be obtained from, and Conditions of Contract inspected at, the Office of the Engineer and Surveyor, 240 London Road, Staines, on receipt of a deposit of £2 2s., returnable on the receipt of a bona-fide Tender not subsequently withdrawn, together with the Specification.

Completed Tenders to be returned in the endorsed envelope provided to the undersigned by 5 p.m. on 2nd FEBRUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

F. ENTWISTLE,

Clerk of the Council.

## STAINES URBAN DISTRICT COUNCIL.

ROADWORKS—CHURCH ROAD, ASHFORD  
(SECTION 1).

TENDERS are invited for WIDENING and RESURFACING PART of the ABOVE ROAD. Provision of a "Bus Layby and Reconstruction of the Footways." Approx. Quantities are: Excavation, 335 cu. yd.; Re-laying Kerb and Provide Channel, 545 lin. yd.; Resurfacing Carriageway, 2,740 sq. yd.; Re-lay Footway, 1,575 sq. yd.

Specification, Bill of Quantities, Form of Tender and Drawings may be obtained from the Office of the Engineer and Surveyor, 240 London Road, Staines, upon payment of a deposit of £2 2s., returnable upon receipt of a bona-fide Tender not subsequently withdrawn, and return of all documents.

Sealed Tenders, in the endorsed envelope provided, and free from any mark indicating the sender, shall reach the undersigned by 5 p.m. on 2nd FEBRUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

F. ENTWISTLE,

Clerk of the Council.

## HEBBURN URBAN DISTRICT COUNCIL.

## FOUR-STOREY MAISONNETTES.

## CENTRAL REDEVELOPMENT AREA.

The Council proposes ERECTING TWO BLOCKS of the ABOVE STEEL-FRAMED BUILDINGS, approx. size 125ft. long x 23ft. wide, and 52ft. long x 23ft. wide, and applications are invited from competent steelwork contractors to TENDER for this work.

Contractors will be required to submit their own steelwork designs in accordance with B.S.5449, and submit Tenders for Providing and Erecting the Steelwork.

Contractors wishing to tender should submit their names to the Engineer and Surveyor not later than 16th JANUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

W. KINGHORN,

Clerk to the Council.

Council Offices,  
Argyle Street,  
Hebburn,  
Co. Durham,  
29th December, 1960.

## CONTRACTS

## STEPNEY METROPOLITAN BOROUGH COUNCIL.

TENDERS are invited for the REINSTATEMENT of the DAMAGED FAIENCE and Sundry Repairs, etc., to the EXTERIOR WALL SURFACES of the MUNICIPAL OFFICES, Nos. 227-233 Commercial Road.

Forms of Tender, with Conditions, etc., obtainable from the BOROUGH ENGINEER AND SURVEYOR, Nos. 227-233 Commercial Road, E.1.

Closing date for Tenders: MONDAY, 30th January, 1961.

## BOROUGH OF HIGH WYCOMBE.

## CONSTRUCTION OF ROAD AND SURFACE WATER SEWER AT BARRY LODGE, CRESSEX ROAD.

TENDERS are invited for the CONSTRUCTION of approximately 180 lin. yd. of CONCRETE ROAD, together with approximately 170 lin. yd. of 6in. diameter SURFACE WATER SEWER at BARRY LODGE, CRESSEX ROAD, High Wycombe.

Specification, Bills of Quantities and Form of Tender may be obtained from the Borough Engineer's Department, Municipal Offices, High Wycombe, on receipt of a cheque for £2 2s., which will be returned on submission of a bona-fide Tender. Drawings may be inspected at the Municipal Offices between 9 a.m. and 5 p.m., Monday to Friday.

Tenders, in a plain sealed envelope, which shall bear no name or mark indicating the sender, but endorsed "Tenders—Barry Lodge," must be delivered to the address above not later than Noon on THURSDAY, 19th January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

J. A. PARKINSON,

Borough Engineer and Surveyor.

## BOROUGH OF SUTTON AND CHEAM.

## ROAD MATERIALS AND STORES.

The BOROUGH COUNCIL invites TENDERS for the SUPPLY of the FOLLOWING MATERIALS AND STORES for the year commencing 1st April, 1961, viz.:

- Tender Form
- (1) Sand, Gravel and Ballast.
- (2) Precast Concrete Paving Slabs.
- (3) Precast Concrete Kerb.
- (4) Bitumen Macadam with Slag or Limestone Aggregate.
- (5) Cold Asphalt and Precast Chippings.
- (6) Supply and Machine Laying of Cold Asphalt.
- (7) Bituminous Emulsions.
- (8) Tarmac with Slag or Limestone Aggregate.
- (9) Ironmongery, Brooms, Brushes and Chandlery.
- (10) Coal and Coke.

The Council does not bind itself to accept the lowest or any Tender, and reserves the right to accept a Tender either for the whole or any of the items comprised therein.

Forms of Tender may be obtained on application to Mr. C. NEEDHAM, M.I.C.E., M.I.Mun.E., A.M.I.Struct.E., Borough Engineer and Surveyor, Municipal Offices, Sutton, Surrey. Applications must state the particular Tender Form required.

Quotations for the materials which do not comply with the Specification on the Tender will not be considered.

Tenders, which must be on the official form, should be forwarded in the envelope provided, endorsed "Tender for Materials (1) to (10)," as the case may be, bearing no indication of the name of the sender, to the Town Clerk, Municipal Offices, Sutton, Surrey, to reach him not later than 28th JANUARY, 1961.

A. PRIESTLEY,

Town Clerk.

Municipal Offices,  
Sutton, Surrey.

## ASPUILL URBAN DISTRICT COUNCIL.

## REFUSE COLLECTING VEHICLE.

TENDERS are invited for the SUPPLY and DELIVERY of ONE DIESEL-ENGINE CHASSIS with Power-assisted Steering, Crew Cab, type to be of approx. 7 tons, 160in. Wheelbase and 8.25 x 20 Tyres, fitted with 18/27 cu. yd. Gibson Pendulum John Gibson and Son, of Leath, Edinburgh, comply with Wastepaper Compartment and Hand Washing Unit, and painted to order.

Separate prices and manufacturer's detailed Specification are required for: (a) Chassis and Cab only; (b) Complete vehicle.

Tenders, quoting delivery date, to be submitted in plain sealed envelopes, endorsed "Refuse Collecting Vehicle," to the undersigned before 5 p.m. on TUESDAY, 17th January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

PETER RYDER,

Clerk of the Council.

Council Offices,  
Aspuill,  
Near Wigan.

4th January, 1961.

## DORCHESTER RURAL DISTRICT COUNCIL.

## TOLLER PORCUM WATER SUPPLY SCHEME.

TENDERS are invited from civil engineering contractors experienced in similar works, for the LAYING of WATER MAINS and the Construction of a Reservoir in accordance with the Drawings, Specification and Bill of Quantities prepared by the Council's Engineer.

The works will comprise the following: (a) The provision and Laying of approx. 530 lin. yd. of 6in. dia. C.I. Mains; (b) The Provision and Laying of approx. 850 lin. yd. of 5in. dia. C.I. Mains; (c) The Provision and Laying of approx. 2,760 lin. yd. of 4in. C.I. Mains; (d) The Provision and Laying of approx. 940 lin. yd. of 3in. C.I. Mains; (e) The Construction of a Brickwork Reservoir of 20,000 gal. capacity.

Applications for tendering documents should be addressed to the Clerk of the Council, 58 High West Street, Dorchester, and must be accompanied by a deposit cheque for £3 3s. made payable to the Council, which cheque will be returned upon receipt of a bona-fide Tender not subsequently withdrawn. The names and addresses of at least two Engineers under whose direction similar works have been carried out by the applicant must also be submitted.

Sealed Tenders, on the form provided and endorsed "Toller Porcum Water," accompanied by the Bill of Quantities fully completed in ink and enclosed in a plain sealed envelope, must be posted to reach the undersigned not later than First Post on SATURDAY, 4th February, 1961.

The Council do not bind themselves to accept the lowest or any Tender, and will not be responsible for any expenses incurred by those tendering.

A. E. SYMES,

Clerk of the Council.

Council Offices,  
58 High West Street,  
Dorchester.

5th January, 1961.

## CONTRACTS

## COUNTY COUNCIL OF MIDDLESEX.

TENDERS are invited for the FOLLOWING for the year commencing 1st April, 1961:

- (a) Maintenance Works on County Roads.
- (b) Repairs and Reinstatements of Asphalt Surfaces.
- (c) Gully Cleansing by Mechanical Cleaner.
- (d) Horticultural (Gardening) Works on County Roads.

(e) Supply of the following Road Materials: (1) Tarred Slag; (2) Tarred Limestone; (3) Tarred Chippings; (4) Ballast, etc.; (5) Tar; (6) Slab Paving; (7) Bitumen Macadam and Cold Asphalt; (8) Ready Mixed Concrete.

Specifications and Forms of Tender can be obtained from the County Engineer and Surveyor, Middlesex House, 20 Vauxhall Bridge Road, Westminster, London, S.W.1.

Tenders must be submitted in the envelope provided, sealed, and delivered to the Clerk of the County Council, Guildhall, Westminster, S.W.1, by a date to be notified by the County Engineer.

The County Council does not bind itself to accept the lowest or any Tender.

KENNETH GOODACRE,

Clerk of the County Council.

Guildhall,  
Westminster, S.W.1.

## COUNTY BOROUGH OF CROYDON.

## NOTICE TO BUILDERS.

Contractors who have the organisation and labour force to carry out the work expeditiously and who wish to TENDER for the UNDERMENTIONED WORK at CROYDON CEMETERY, THORNTON ROAD, should send their names to the Borough Engineer within seven days of this advertisement.

- (1) Extensions to Crematorium, comprising a new Chapel, Hall of Remembrance, Chapel of Rest, Columbarium and ancillary offices.
- (2) Public Mortuary and Post Mortem Accommodation, with Coroner's Office and Attendant's Bungalow.

Bills of Quantities will be issued on the 1st February, 1961.

Closing date for Tenders: 28th FEBRUARY, 1961.

E. TABERNER,

Town Clerk.

Town Hall,  
Croydon.

## RURAL DISTRICT COUNCIL OF NEW FOREST.

## ELING SEWERAGE.

## PROPOSED SLUDGE DIGESTION TANKS—ASHURST BRIDGE SEWAGE WORKS.

FIXED-PRICE TENDERS are invited from experienced contractors for the CONSTRUCTION of TWO CIRCULAR REINFORCED CONCRETE SLUDGE DIGESTION TANKS (coid, uncovered), complete with Decanting Chambers, and all ancillary Pipework, Banking and Roadworks.

Drawings, Conditions of Contract, Specification, Bills of Quantities and Form of Tender may be obtained from the Engineer and Surveyor on payment of a deposit of Five Guineas, which will be refunded upon receipt of a bona-fide Tender or return of all documents.

Tenders, in a plain sealed envelope endorsed "Eling Sludge Digestion Tanks," are to be returned to the undersigned by First Post on MONDAY, 13th JANUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

F. R. APPLEBY,

Clerk of the Council.

Council Offices,  
Lyndhurst.

13th December, 1960.

## NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

## SLOUGH HOSPITAL, WEXHAM PARK.

The Board intends shortly to invite TENDERS for the MECHANICAL ENGINEERING SERVICES INSTALLATION for the ABOVE NEW HOSPITAL.

The work will include the Supply and Installation of Unit-rated Steam boiler plant, Steam and Condensate Mains, Hot Water and Low Pressure Heating Co-ordinators and Circulating Pumps, Hot and Cold Water Services, Heating Installation, Mechanical Ventilation Plant, Air-tight and Surveilling Services.

The work is to be carried out in accordance with the Drawings and Specifications prepared by Messrs. J. Roger Preston and Partners, Consulting Mechanical Engineers, 13 North Audley Street, London, W.1.

Contractors who wish to be included in a list of firms from which a number will be selected to be invited to Tender, should make application to the Secretary, NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD, 40 Eastbourne Terrace, London, W.2, not later than 31st JANUARY, 1961.

Only contractors having experience in carrying out large-scale contracts should apply, and applicants must give particulars of individual jobs not under £20,000 each in value, which they have completed within, say, the last five years, together with the names and addresses of at least two professional engineers under whose supervision the work was done.

For Contracts received too late for classification see page 49

## APPOINTMENTS VACANT

## BOROUGH OF BRIDGWATER.

## HAWKRISE RESERVOIR.

## RESIDENT ENGINEER'S STAFF.

APPLICATIONS are invited for the APPOINTMENT of an INSPECTOR to work under the direction of the Resident Engineer and the Corporation's Consulting Engineers, MESSRS. JOHN TAYLOR AND SONS, Westminster, S.W.1. The person appointed must have had wide experience of concrete quality control.

Salary £900 p.a. The appointment is of a temporary nature, subject to one month's notice on either side, but is normally expected to last until April, 1962. The works include the construction of a mass concrete dam and water treatment plant.

Applications, in writing, stating age, brief details of past experience, and the names of two Engineers to whom reference can be made, should be sent to the Town Clerk, Bridgwater, to reach him before 16th JANUARY, 1961.

(Signed) H. A. CLIDERO,

Town Clerk.

Town Hall,  
Bridgwater, Som.



## APPOINTMENTS VACANT BOROUGH OF SURBITON.

### APPOINTMENT OF TWO SENIOR ASSISTANT ENGINEERS.

APPLICATIONS are invited for TWO SENIOR ASSISTANT ENGINEERS, Grade A.P.T. IV (£1,250-£1,310 per annum, plus London Weighting). Applicants should have passed the Final Examination of either the Institution of Civil Engineers or the Institution of Municipal Engineers, and have had good experience in municipal engineering. The appointments are subject to: (a) The provisions of the Local Government Superannuation Act, 1937; (b) The successful candidate passing a medical examination; (c) The provisions of the National Scheme of Conditions of Service. Consideration will be given to providing living accommodation for the successful applicants: 75 per cent. of approved removal expenses will be paid. Applications should be delivered to MR. R. THIRLWAY, M.I.Mun.E., M.I.Struct.E., Registered Architect, Borough Engineer and Surveyor, at these offices, by 9th JANUARY, 1961. Application forms may be obtained from the undersigned.

JOHN H. A. CRUNDALL, Town Clerk.

Council Offices,  
Sub-ton,  
December, 1960.

## CITY OF WAKEFIELD. CITY ENGINEER'S DEPARTMENT.

### APPOINTMENT OF ASSISTANT HIGHWAYS SUPERINTENDENT.

APPLICATIONS are invited for the ABOVE SUPERANNUABLE POST on the permanent staff of the City Engineer at a salary in accordance with Miscellaneous Grade VI (£760 p.a. £25 x £20 x £20 = £825).

Applicants must be apprentice trained and have had a sound experience in highways and sewer construction and maintenance, and must hold a full driving licence. Preference will be given to applicants qualified by examination of the Institution of Works and Highways Superintendents.

Housing accommodation will be provided, if necessary, and a five-day working week will come into operation on the 1st January, 1961.

Applications, giving age and full particulars of experience, with the names of two referees, to be sent to the CITY ENGINEER, Town Hall, Wakefield, by 9th JANUARY, 1961.

## SALISBURY AND WILTON RURAL DISTRICT COUNCIL.

### CONSTRUCTION OF REINFORCED CONCRETE RESERVOIR.

#### APPOINTMENT OF ASSISTANT RESIDENT ENGINEER.

APPLICATIONS are invited for the APPOINTMENT of an ASSISTANT RESIDENT ENGINEER to assist the Resident Engineer under the direction of the Council's Consulting Engineers in the construction of a 1,200,000 gallon reinforced concrete reservoir, and other water and sewerage works for the Salisbury and Wilton Rural District Council.

The salary will be in the range of £900-£950 per annum, according to age and experience, and a casual user car allowance in accordance with the Local Government Scheme for 1961.

The appointment, subject to satisfactory service, will be for 12 months, with the possibility of continued appointment on the Council's future contracts, but may be terminated by one month's notice on either side.

Applicants, who must have had experience in the use of reinforced concrete in water-retaining structures, should apply in writing to the undersigned not later than MONDAY, the 23rd January, 1961, giving full particulars of age, qualifications and experience, together with the names of two responsible engineers to whom reference can be made.

C. S. BROWN, Clerk of the Council.

Council Offices,  
26 Endless Street,  
Salisbury,  
Wilt.,  
23rd December, 1960.

## TRENT RIVER BOARD.

### APPOINTMENT OF LAND DRAINAGE INSPECTOR.

APPLICATIONS are invited for the ABOVE APPOINTMENT in the Board's Divisional Office near Trent Bridge, Nottingham, within a salary range of £555 to £595 by annual increments. The commencing salary will be in accordance with qualifications and experience, but except in exceptional circumstances is unlikely to exceed £685. The appointment will be subject to the Local Government Superannuation Acts.

The duties of the appointment include the control and direction of gangs of workmen engaged in land drainage works on rivers. Applicants should have a background knowledge of civil engineering and be able to supervise gangs of workmen in the execution of Works. They should hold a current driving licence and car allowance on essential user scale is payable. The assisted car purchase scheme is operated by the Board.

Applications, accompanied by testimonials, stating age, marital state, qualifications and experience and details of previous appointments, should be submitted in writing to the Engineer to the Board, 206 Derby Road, Nottingham, within 14 days of the appearance of this advertisement.

IAN DRUMMOND, Clerk of the Board.

## KINGSTON UPON HULL EDUCATION COMMITTEE.

### APPOINTMENT OF RESIDENT ENGINEER FOR THE ERECTION OF THE NEW LISTER HIGH SCHOOL, KINGSTON UPON HULL.

APPLICATIONS are invited from suitably qualified men for the POST of RESIDENT ENGINEER for the erection of the David Lister High School, Kingston upon Hull. This new comprehensive school, which will provide accommodation for 1,440 pupils and is estimated to cost about £517,000, is being designed by MESSRS. LYONS, ISRAEL AND ELLIS, Chartered Architects, of London, with MESSRS. F. I. SAMUELY AND PARTNERS, of London, as Consulting Engineers. The commencing salary will be at the rate of £1,100 p.a. and a site allowance of £150 p.a. for a single man, or of £200-£250 p.a. to a married man, depending on the particular circumstances, will be payable to a successful candidate living away from home.

The appointment is for a period of about 2½ years, commencing in about July, 1961. Application forms and full particulars may be obtained from the undersigned, to whom completed forms should be returned not later than the 27th JANUARY, 1961.

S. W. HOBSON, Chief Education Officer.  
Guildhall,  
Kingston upon Hull,  
Yorkshire.

## APPOINTMENTS VACANT BRITISH GUIANA.

### PUBLIC WORKS DEPARTMENT. ENGINEERS (STRUCTURES).

Qualifications: Corporate Membership of the Institution of Structural Engineers, with at least five years' experience in a designer's office.

Duties: The preparation of designs and drawings for buildings, bridges, and other structures in reinforced concrete, structural steel and timber.

Emoluments: In scale £1,100-£1,400 p.a.

Terms of Appointment: On contract for one tour of three years, with substantial gratuity (22½ per cent. of salary).

Free passages. Generous leave.

Apply DIRECTOR OF RECRUITMENT, Colonial Office, London, S.W.1. Give full name and age, and brief details of qualifications and experience. Quote BCD112.30.023 D14.

## COUNTY BOROUGH OF WEST HAM.

BONUS MEASURING ASSISTANT REQUIRED. Must be experienced in measuring building works in all trades for incentive bonus. Salary, Miscellaneous Grade V (£685 to £760 per annum, plus London allowance of £25-£40 per annum, according to age). Commencing salary within the above range, according to experience. Applications in writing, giving full particulars of experience, age, etc., should be addressed to the BOROUGH ENGINEER AND SURVEYOR, West Ham Town Hall, Stratford, E.15, immediately.

## BOROUGH OF FARNWORTH.

### APPOINTMENT OF HIGHWAYS SUPERINTENDENT.

APPLICATIONS are invited for the ABOVE APPOINTMENT at a salary in accordance with Grade VI (£760-£825) of the National Scheme of Conditions of Service. Commencing salary according to qualifications and experience.

Applicants must have had experience in the supervision of men, road and sewer construction work, and refuse collection and disposal, and must hold a current driving licence. Previous service with a local authority will be an advantage. The nature of the duties of the post will call for hours of duty in excess of normal hours as conditions demand. Applicants must be prepared to reside within the Borough.

Applications, endorsed "Highways Superintendent," stating age, qualifications, experience, and previous appointments, together with the names and addresses of two referees, must reach the undersigned not later than 12th JANUARY, 1961.

THOMAS HITCHEN, Town Clerk.

Town Hall,  
Farnworth,  
Lancs.

## UTTOXETER URBAN DISTRICT COUNCIL.

### WATER SUPPLY.

#### APPOINTMENT OF CLERK OF WORKS.

APPLICATIONS are invited for the APPOINTMENT of CLERK OF WORKS to supervise the construction of two reinforced concrete reservoirs at Prestwood and Bramshall, and approximately 3½ miles of 10in. and 8in. spun-iron pipe watermain, with other incidental works, between Uttoxeter and Uttoxeter, under the direction of the Council's Consulting Engineers, MESSRS. WILCOX, RAIKES AND MARSHALL, 33 Great Charles Street, Birmingham, 3.

Applicants must have had experience of reinforced concrete construction and the laying of watermains, and be well acquainted with the duties of a Clerk of Works. The appointment will be subject to satisfactory service and will be terminated by one month's notice on either side.

Applications in writing, with full particulars of age, experience and previous appointments, and when designated, stating salary and allowances required, with the names of two referees or copies of two recent testimonials, are to be sent to the undersigned not later than FRIDAY, the 27th day of January, 1961.

JOHN H. KENNY, Clerk of the Council.

Council Offices,  
Old Bank House,  
72 High Street,  
Uttoxeter,  
Staffs.

## ASHBOURNE URBAN DISTRICT COUNCIL.

### CLERK OF WORKS.

APPLICATIONS are invited for the APPOINTMENT of a TEMPORARY CLERK OF WORKS to supervise engineering and housing works, under the direction of the Engineer and Surveyor, at a salary of £950 p.a. Housing accommodation will be available if required. A 5-day week is the norm.

Applicants should have a thorough knowledge of housing and public works, including inspection of materials and workmanship, setting-out, levelling, measuring-up and reporting.

The appointment will be for a period of 18 months in the first instance, subject to termination by one month's notice on either side, and to the provisions of the Local Government Superannuation Acts, and to a medical examination.

Applications, stating age, present appointment, and experience, together with the names of two referees, must be forwarded to the undersigned not later than the 16th JANUARY, 1961.

F. H. THOMAS, Clerk of the Council.

Compton Offices,  
Ashbourne,  
Derbyshire,  
23rd December, 1960.

## NESTON URBAN DISTRICT COUNCIL.

### BURTON SEWERAGE—RESIDENT ENGINEER.

APPLICATIONS are invited from suitably qualified persons for the ABOVE POST, to supervise the construction of a small sewage works and main drainage for Burton Village.

The appointment is expected to commence early in 1961 and to continue for about nine months.

The salary will be at a rate of £1,250 p.a. plus £250 p.a. subsistence allowance.

Applicants, giving details of qualifications, experience and age, together with the names and addresses of two referees, should reach the undersigned not later than 14th JANUARY, 1961.

Interviews will be held at the Offices of the Consulting Engineers, MESSRS. WARD, ASHCROFT AND PARTNERS, of Liverpool.

F. H. D. HARTMAN, Clerk of the Council.

Neston U.D.C.,  
Town Hall,  
Neston,  
Wirral.

## APPOINTMENTS VACANT

### SOMERSET COUNTY COUNCIL.

#### HIGHWAYS SUPERVISORY FOREMAN REQUIRED

in the Long Ashton Division of Somerset. Candidates should possess an all-round knowledge and experience of road maintenance and construction, including the organisation and control of men and plant, and would be required to reside within the Division which is adjacent to Bristol, a cottage being available if required. Commencing wage £11 5s. per week plus a £3 car allowance, and the post is superannuated.

Applications, which must be received by SATURDAY 14th January, 1961, should be addressed to the DIVISIONAL HIGHWAY SURVEYOR, Somerset County Council Office, Cambridge Batch, Flax Bourton, near Bristol.

## BOROUGH OF WORTHING.

### CLERK OF WORKS—ARCHITECTURAL.

APPLICATIONS are invited for the APPOINTMENT of CLERK OF WORKS in connection with the Council's building programme, at a salary of £15 15s. per week. The Corporation have an intensive programme and, subject to satisfactory service, the appointment, although on the temporary staff, is likely to continue for many years.

The appointment will be subject to the National Scheme of Conditions of Local Government Officers; to the provisions of the Local Government Superannuation Acts; and to the successful candidate passing satisfactorily a medical examination.

Applications, stating age, qualifications, experience, present and past appointments (with dates), and accompanied by copies of three testimonials, should be sent to the Borough Engineer and Surveyor, Town Hall, Worthing, not later than the 16th JANUARY, 1961.

ERNEST G. TOWNSEND, Town Clerk.

## BOROUGH OF WORTHING.

### APPOINTMENT OF ASSISTANT ARCHITECT.

APPLICATIONS are invited for the APPOINTMENT of an ASSISTANT ARCHITECT in the Borough Engineer's Department on Grade A.P.T. I (£645-£815 per annum).

Applicants should have had experience in an Architect's office and be training for professional examinations.

The appointment will be subject to the National Scheme of Conditions of Service of Local Government Officers; to the provisions of the Local Government Superannuation Acts; and to the successful candidate passing satisfactorily a medical examination.

Applications, stating age, qualifications, experience, present and past appointments (with dates), and accompanied by copies of two recent testimonials, should be submitted to the Borough Engineer and Surveyor, Town Hall, Worthing, not later than the 16th JANUARY, 1961.

ERNEST G. TOWNSEND, Town Clerk.

## MATLOCK URBAN DISTRICT COUNCIL.

### DARLEY DALE SEWERAGE SCHEME.

#### APPOINTMENT OF ASSISTANT CLERK OF WORKS.

APPLICATIONS are invited for the ABOVE APPOINTMENT to supervise the laying of concrete, salt glazed ware and cast-iron sewers, the construction of four sewage pumping stations, and the installation of machinery, under the direction of the Council's Consulting Engineers, MESSRS. W. H. RADFORD AND SON.

The salary of the Assistant Clerk of Works will be £1,000 p.a., and rented housing accommodation will be made available if required.

Applicants must be thoroughly conversant with the duties of a Clerk of Works and have had experience in this type of work, which includes deep excavations, reinforced concrete structures, pressure pipelines, river crossings, etc.

The appointment is expected to start in March, 1961, and to last for approx. two years.

Applications, stating age, qualifications and experience, and the names of three persons to whom reference may be made, must be delivered to the undersigned not later than Noon on MONDAY, 23rd January, 1961.

J. OWEN HUNT, Solicitor and Clerk of the Council.

Town Hall,  
Matlock, Derby.  
21st December, 1960.

## HOLMFIRTH URBAN DISTRICT COUNCIL.

### DEPUTY ENGINEER AND SURVEYOR.

Holmfirth Council invite APPLICATIONS for this APPOINTMENT.

Application must be made in a form obtainable from the CLERK OF THE COUNCIL, Council Offices, Holmfirth.

M.I.C. Conditions, including essential user car allowance at minimum scale, Salary A.P.T. II for a suitable candidate who at the date of appointment has not passed the Final Examination of the Institution of Municipal Engineers, progressing to A.P.T. III on passing this examination, or A.P.T. III for a candidate who has already passed the examination. Closing date: 16th JANUARY, 1961.

## DROYLSDEN URBAN DISTRICT COUNCIL.

### RESIDENT ENGINEER.

APPLICATIONS are invited for the APPOINTMENT of a RESIDENT ENGINEER for the supervision of the construction of new sewers, under the direction of the Council's Consulting Engineers, MESSRS. W. HERBERT BATEMAN AND PARTNERS.

The work comprises the construction of approx. 2,800 lin. yd. of new main sewers varying in size from 24in. to 45in. dia., in built-up areas, mainly in tunnels, and also the culverting of approx. 600 lin. yd. of an existing open stream, with pipes varying in size from 30in. to 54in. dia. The duration is expected to be about two years.

Candidates for the appointment are required to have had considerable experience of sewer construction and of work in tunnels.

The salary for the appointment is £1,250 p.a. and the appointment is subject to one month's notice on either side.

Applications for the appointment, endorsed "Resident Engineer," giving full particulars of the candidate's age, experience, present appointment, and stating when free, together with copies of three testimonials, or the names of three referees, should be submitted to the undersigned within seven days of the publication of this advertisement.

G. S. HEPTON, Clerk of the Council.

Council Offices,  
Droylsden,  
Lancs.

## APPOINTMENTS VACANT

## MAURITIUS.

MINISTRY OF HOUSING, LANDS, AND TOWN AND COUNTRY PLANNING.

## CIVIL ENGINEER.

Qualifications: Candidates (preferably not over 50) should have either a University Degree, or equivalent, recognised by the Institution of Civil Engineers, and two years' practical experience; or have passed, or be otherwise exempt from, Parts I and II of the Final Examinations of the Institution of Civil Engineers, and have had not less than five years' practical experience.

Duties: To take charge of the fieldwork of the Cyclone Housing Organisation, to supervise site works and erection of houses, and such other duties as the Government may call upon the officer to perform.

Terms: Contract for one tour of three years with salary £1,700 p.a. Terminal gratuity of £50 for each three months' resident service.

Free passages, Income tax at local rates.

Apply: DIRECTOR OF RECRUITMENT, Colonial Office, London, S.W.1. Give full name and age, and brief details of qualifications and experience. Quote BC160/52/01 D14.

## COUNTY BOROUGH OF SOUTHEAST-ON-SEA.

APPLICATIONS are invited for the APPOINTMENT of CHIEF ASSISTANT ENGINEER, Scale "B" (£1,475 x £65(3)—£1,670).

An extensive programme of capital works is in progress, and candidates must be Chartered Civil Engineers and/or Chartered Municipal Engineers, with experience in a Municipal Engineer's office.

Applications, stating age, education, training, qualifications, previous and present employment, accompanied by one copy testimonial, and giving the names of two professional referees, should reach the Borough Engineer, MR. T. B. HILL, M.I.C.E., M.I.Mun.E., A.M.I.W.E., Municipal Buildings, Southend-on-Sea, by WEDNESDAY, 25th January, 1961.

The Council will meet reasonable removal expenses and afford assistance in housing in suitable cases. Canvassing will disqualify.

ARCHIBALD GLEN, Town Clerk.

Southend-on-Sea, 20th December, 1960.

## BOROUGH OF SHREWSBURY.

## ENGINEERING ASSISTANTS.

APPLICATIONS are invited for the POST of ENGINEERING ASSISTANT (two vacancies) on the permanent staff of the Borough Surveyor, at a salary in accordance with A.P.T. III, £960-£1,140 per annum, commencing according to qualifications and experience.

Housing accommodation can be provided in the case of one post. Approved removal expenses paid. Casual user of allowance according to duties. Five-day week. Extensive programme of capital works in hand includes new sewage disposal works, river bridge, abattoir, and main drainage.

Applications, stating age, qualifications, and experience, and names of two referees, to be sent to the Borough Surveyor, Guildhall, Shrewsbury, by MONDAY, 16th January, 1961.

S. R. H. LOXTON, Town Clerk.

## BOROUGH OF MIDDLETON.

## BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

APPLICATIONS are invited for the UNDER-MENTIONED APPOINTMENTS from persons possessing the necessary qualifications:

(a) Senior Assistant Architect—A.P.T. Grade IV (£1,140-£1,310 p.a.).

(b) Architectural Assistant—A.P.T. Grade III IV (£960-£1,310 p.a.).

The appointments will be permanent, subject to one month's notice on either side, and to the Local Government Superannuation Acts.

Provision of housing accommodation will be considered if required.

Applications, stating age, qualifications, experience, and giving the names of two referees, should be delivered to the undersigned not later than Noon on WEDNESDAY, 11th January, 1961.

F. JOHNSTON, Town Clerk.

Town Hall, Middleton, Near Manchester, 20th December, 1960.

## CITY OF NOTTINGHAM.

## WATER DEPARTMENT.

## APPOINTMENT OF SUPPLIES ASSISTANT.

APPLICATIONS are invited for the ABOVE PERMANENT PENSIONABLE APPOINTMENT, at a salary dependent upon qualifications and experience in Grade A.P.T. II (£815 x £935—£935 x £975—£960).

Candidates should possess the Certificate of the Worshipful Company of Plumbers, and preferably have had administrative experience in the distribution department of a large water undertaking.

Applications, with the names of two persons to whom reference can be made, to the Engineer and General Manager, Castle Boulevard, Nottingham, not later than 23rd JANUARY, 1961.

T. J. OWEN, Town Clerk.

The Guildhall, Nottingham.

## BRIERLEY HILL URBAN DISTRICT COUNCIL.

## APPOINTMENT OF GENERAL FOREMAN.

GENERAL FOREMAN (Roads and Sewers) REQUIRED for Surveyor's Department. Salary within Scale £815-£960 per annum.

Permanent superannuated post. Provision of housing accommodation considered.

Particulars of duties and Forms of Application from Engineer and Surveyor, Civic Buildings, Brierley Hill. HERBERT HEX, Clerk of the Council.

Civic Buildings, Brierley Hill.

## ACCRINGTON CORPORATION.

A HIGHWAYS SUPERINTENDENT is REQUIRED, experienced in all branches of road and sewer construction and maintenance. Control of labour, and the usual administrative duties. Applicants should be able to drive a light van.

Salary Misc. Grade VI (£760-£825). Housing accommodation available.

Apply, stating age, qualifications, experience, and the names of two referees, to the TOWN CLERK, Town Hall, Accrington, by 18th JANUARY, 1961.

## APPOINTMENTS VACANT

## CITY AND COUNTY OF NEWCASTLE UPON TYNE.

## CITY ENGINEER'S DEPARTMENT.

## APPOINTMENT OF DEPOT SUPERINTENDENT.

APPLICATIONS are invited for the ABOVE-NAMED APPOINTMENT at a salary in accordance with A.P.T. Grade III (£960-£1,140).

Applicants should have had experience in the maintenance and general management of civil engineering mechanised plant and transport vehicles of all descriptions, and in the control of staff required for this purpose.

The appointment is subject to the Local Government Superannuation Acts, the National Scheme of Conditions of Service, the satisfactory passing of a medical examination, and one month's notice on either side.

Applications, giving age, education, qualifications, present and past appointments, and details of experience, together with the names of two persons to whom reference may be made, should be sent in envelopes endorsed "Depot Superintendent," to the City Engineer, Town Hall, Newcastle upon Tyne, 1, to arrive not later than the 23rd JANUARY, 1961.

JOHN ATKINSON, Town Clerk.

## CITY OF CANTERBURY.

## APPOINTMENT OF TEMPORARY RESIDENT ENGINEER ON RING ROAD AND A2 DIVERSION ROAD CONSTRUCTION SCHEME.

APPLICATIONS are invited for the ABOVE APPOINTMENT.

Candidates must have appropriate qualifications and must have had considerable experience in highway engineering, including the supervision of large-scale road and bridge construction and bridge works.

The appointment is temporary, and the salary will be at the rate of £1,500 per annum inclusive of all allowances for lodging, subsistence, travelling, etc. The duration of the contract will be approx. two years.

Applications, stating age, qualifications, and full details of experience, with the names of two referees, should reach the undersigned not later than MONDAY, 30th January, 1961.

(Signed) J. E. RHODES, City Engineer.

Municipal Buildings, Dane John, Canterbury.

## CITY OF ST. ALBANS.

## CITY ENGINEER AND SURVEYOR'S DEPARTMENT.

APPLICATIONS are invited for the POST of ASSISTANT WORKS SUPERINTENDENT, Salary Grade Misc. VII (£825 x £20 x £25 x £20—£890).

Permanent superannuated post. Housing accommodation available.

Applications, with the names of two referees, to reach me by 13th JANUARY, 1961.

B. V. ENTWISTLE, Town Clerk.

38 St. Peter's Street, St. Albans.

## RUGELEY URBAN DISTRICT COUNCIL.

## SEWERAGE AND SEWAGE DISPOSAL.

## CONTRACT NO. 1.

## RESIDENT ENGINEER.

APPLICATIONS are invited by the Council from persons of exceptional experience for the APPOINTMENT of RESIDENT ENGINEER to supervise, under the direction of the Engineer, MESSRS. WILLCOX, RAIKES and MARSHALL, the construction of a sewage disposal works, sewage pumping stations, and other incidental works.

The period of the contract for the work, which governs the length of the appointment, subject to satisfactory service, is 21 months, and it is anticipated the work will commence during April, 1961. The appointment will be determinable on two months' notice given by either side.

Applications, giving full details of experience, age, when disengaged, salary required, with references or copies of recent testimonials, should be sent to the undersigned immediately.

F. WILLIAMS, Clerk of the Council.

The Council House, Rugeley, Staffs.

## PERSHORE RURAL DISTRICT COUNCIL.

## PERSHORE SEWERAGE AND SEWAGE DISPOSAL.

## RESIDENT ENGINEER AND INSPECTOR.

The Council invite APPLICATIONS from persons of exceptional experience for the APPOINTMENT of (1) RESIDENT ENGINEER, and (2) INSPECTOR OF WORK, to supervise, under the direction of the Engineer, MESSRS. WILLCOX, RAIKES and MARSHALL, the construction of sewerage and sewage disposal works at Pershore, consisting of the construction of approx. 12 miles of 6in. to 21in. dia. sewers and manholes, and live pumping stations, together with the construction of disposal works comprising settling and stormwater tanks, circular filters, humus tanks, sludge drying beds, sludge pumping station and store, and other incidental works.

The duration of the contract for the work which governs the length of the appointment, subject to satisfactory service, is expected to be 2½ years. The appointment will be determinable on two months' notice in respect of Appointment (1), and one month's notice in respect of Appointment (2).

Applications in writing, giving full details of age, experience, when disengaged, salary required, together with references or copies of recent testimonials, should be sent to the undersigned not later than the 8th FEBRUARY, 1961.

Council Offices, Pershore, Worcs.

W. G. TRAPP, Clerk of the Council.

29th December, 1960.

## WEST SUSSEX RIVER BOARD.

## ENGINEERING OR SURVEYING ASSISTANT—GRADE A.P.T. I (£645-£815).

APPLICATIONS are invited for the ABOVE SUPER-ANNUABLE POST from candidates who are capable of making surveys for land drainage and sea defence schemes.

Previous experience with a land drainage authority will be an advantage, but is not essential.

Applications, stating age, education, experience, qualifications (if any), and giving the names of two referees, to be sent to the CHIEF ENGINEER, West Sussex River Board, County Hall, Chichester, Sussex, as soon as possible.

T. C. HAYWARD, Clerk of the Board.

## APPOINTMENTS VACANT

## MACCLESFIELD DISTRICT WATER BOARD.

APPLICATIONS are invited for the FOLLOWING APPOINTMENTS:

(a) Senior Assistant Engineer—Grade A.P.T. IV (£1,140-£1,310).

(b) Assistant Engineer—Grade A.P.T. II/III (£815-£1,140).

Applicants for post (a) must be Chartered Civil Engineers and preferably Associate Members of the Institution of Water Engineers; and for post (b) must be studying for Associate Membership of the Institution of Civil Engineers. The commencing salary for post (b) will be within A.P.T. II, increasing to A.P.T. III on election to Corporate Membership.

The Board, which comes into operation on 1st April, 1961, will derive supplies from underground and impounded sources, and the persons appointed will participate in the creation and operation of a new water supply organisation.

The appointments are subject to the National Scheme of Conditions of Service, the Local Government Superannuation Acts, and to the passing of a medical examination.

The Board will endeavour to arrange, if requested, the provision of a house at an economic rent for a temporary period for the person appointed to post (a).

Applications for each post, stating age, qualifications and experience, and quoting two referees, should be sent to the undersigned not later than FRIDAY, 20th January, 1961.

WALTER ISAAC, Clerk to the Board.

Ivyholme, Kendal Road, Macclesfield.

## ENGINEERS

Civil engineering contracting, overseas. Applications for site engineering posts on a large overseas contract are invited from ENGINEERS having at least five years' site experience. The work is varied and interesting, and the climate is pleasant. Two-year tours. Good prospects for assistant engineers with drive and a sound technical and commercial background.—Write, stating training, experience, age and marital status, to:

BOX V.3120, "THE CONTRACT JOURNAL."

EXPERIENCED GENERAL FOREMAN REQUIRED for large overseas contract. Applicants must have good all-round experience and should have held previous positions as General Foreman or as a site engineer. Write full details of experience to Box V.3177, "The Contract Journal."

SENIOR AGENT REQUIRED by expanding firm of civil engineering contractors. With proved ability on contracts of £200,000 or over. This is a permanent staff appointment, with pension rights and good remuneration.—Written applications, stating age, experience, and salary, required, to Box V.3281, "The Contract Journal."

A VACANCY exists with well-known building and civil engineering contractors in Portsmouth for a SURVEYOR with sound knowledge and experience of int. m. valuations, final accounts and site measuring.—Full particulars to JNO. CROAD, LTD., Portland Street, Portsmouth. (Ref. KK.)

## CONTRACTS MANAGER

CONTRACTS MANAGER REQUIRED by London firm of earthmoving contractors. Must have wide experience in use of earthmoving equipment. Preference will be given to man who has held similar position and who has specialised in excavation work. Excellent opportunity for ambitious and progressive man with ability and drive. Generous commission offered on results. Write in strictest confidence, stating experience, age, salary required, to:

Chairman,

BOX V.3242, "THE CONTRACT JOURNAL."

ESTIMATOR REQUIRED, with previous experience of bills of quantities, taking off for new work, alterations, etc., up to £15,000. Excellent opportunity of progressing to larger contracts.—Reply, stating age, experience, and salary required, to JNO. CROAD, LTD., Portland Street, Portsmouth. (Ref. KK.)

SITE ENGINEERS REQUIRED for setting-out railway and civil engineering works. Must be prepared to travel within the U.K.—Apply in confidence to EAGRE CONSTRUCTION CO., LTD., East Common Lane, Scunthorpe, Lincs.

## MOTORWAYS PROJECT MANAGER

Applications are invited from qualified engineers who have held positions as senior agent, deputy project manager or project manager on motorway construction contracts for the ABOVE POSITION with a well-established civil engineering contractor. This position will offer permanent employment and superannuation scheme, with a remuneration not less than £3,000 per annum for the right man.

WRITE BOX C1157, L.P.E.

60/62 St. Martin's Lane, London, W.C.2.

SITE ENGINEERS REQUIRED for general civil engineering contracts in Britain. Qualification preferred, experience contract site duties essential. Must be mobile. Permanent posts to right men.—Applications, giving personal details, salary range, experience, etc., in confidence, to: HARBOUR AND GENERAL WORKS, LTD., 173 St. Stephen's House, Victoria Embankment, Westminster, S.W.1.

CUBAN CONSTRUCTION CO., LTD., REQUIRE the following staff for building and civil engineering contracts in the North-West Area: SENIOR MEASURING SURVEYOR, with ability to deal with several contracts up to £1m. value, responsible only to directors; SITE AGENT, for building contract, with ability to set out; JUNIOR SETTING-OUT ENGINEER; TIMEKEEPERS and COST/BONUS CLERKS.—Apply in writing to Managing Director, Cuban Construction Co., Ltd., 1-3 Clarence Street, Manchester, 2.

WEST AFRICA. Appointments will be made for a short period of WORKS MANAGER and SERVICE ENGINEER for plant hire organisation in Nigeria. Applicants need experience in actual repair and overhaul of earthmoving and civil engineering equipments, and be capable of supervising labour.—Applications to GREENHAM (PLANT HIRE), LTD., 671 London Road, Isleworth.

SWIMMING POOL contractors REQUIRE fully experienced and competent CONCRETERS/FOREMEN for work in Home Counties and South-East.—Only qualified applicants need apply to GILHAM, Purley, Surrey. Tel.: UPLANDS 9222.



## APPOINTMENTS VACANT

**APPLICATIONS** are invited from JUNIOR CIVIL ENGINEERS for interesting appointments in professional offices in Cyprus and Aden. Candidates, aged 24-30, should be graduates of I.C.E. or equivalent, and have had a minimum of four years' experience in a municipal engineers' or contractors' office. He will be required to design and supervise road construction, drainage works and building foundations associated with housing schemes and camp layouts. He must also have had experience in the design and detailing and supervision of normal reinforced concrete construction.—Applicants should apply, in writing, giving full particulars, to: **TRIPLE AND WAKEHAM**, 16 Fitzhardinge Street, London, W.1.

## SENIOR BUILDING AGENTS

Due to continued expansion of their building department, **SIR LINDSAY PARKINSON AND CO. LTD.** would like to receive applications from SENIOR BUILDING AGENTS having drive and initiative and who can show a sound record in control of large building projects. The positions are progressive and the company operates a superannuation scheme. Applications, in writing, giving details of age, experience, etc., to be addressed to:

Building Director,  
**SIR LINDSAY PARKINSON AND CO. LTD.**,  
6 Lambeth Road, S.E.1.

**YOUNG ENGINEER REQUIRED** for local civil engineering contracts. Preference given to applicant with previous experience on earthmoving and general road construction.—Apply, stating qualifications, age, experience, and salary required, to **F. M. SPARROW (CONTRACTORS)**, LTD., Oakley, Bedford.

**CONTRACTORS' PLANT FOREMAN**. Must be skilled in all types plant and vehicles. Good pay and superannuation for suitable man.—Write, giving full details of experience, and stating salary required, to **KEBRIC PLANT, LTD.**, 2/6 The Mead, Carpenders Park, Watford, Herts.

## SITE QUANTITY SURVEYOR

**REQUIRED** for work on civil engineering contract at Hunterston nuclear generating station, Ayrshire. Age approx. 21 to 30 years. Should have previous site experience and knowledge of Standard Method of Measurement.—Applications, giving details of age, experience and qualifications, quoting Ref. QS.190, to:

Contract Labour Department,  
**SIMON-CARVES, LTD.**,  
Cheadle Heath, Stockport.

**PLANT MANAGER/SUPERVISOR REQUIRED** by building and civil engineering contractors, Surrey area. Able to control site plant essential.—Write, giving details of experience, and salary required, to **Box 1019, c/o Murray and Phelan, Ltd.**, Columbiad House, Aldwych, W.C.2.

**SURVEYOR**. Experienced in preparing interim valuation and site measurements on all classes of civil engineering work. Knowledge of estimating an advantage. Car provided. Pension scheme in operation. Progressive, permanent staff appointment to suitable applicant.—Applications in writing, stating age, experience, and salary required, to **J. L. EVE CONSTRUCTION CO., LTD.**, 17 Hillside, Ridgway, Wimbledon, S.W.19.

## SPARE PARTS MANAGER

In view of the expanding spare parts department for their motor cranes, and the addition of the Neal-Unit excavator, **R. H. NEAL AND CO., LTD.**, at their Grantham Works, Lincs., have separated spares from works production, and are now REQUIRING a first-class MANAGER to take over the new spares department. Excellent opportunity for someone with enterprise and initiative, and previous similar experience. Superannuation scheme. Housing assistance if required.—Write with fullest details, in confidence, and stating salary required, to:

Managing Director,  
**R. H. NEAL AND CO., LTD.**,  
Plant House, Ealing, London, W.5.

**TARMAC CIVIL ENGINEERING, LTD.** REQUIRE PLANT ENGINEERS to take charge of all plant on major contracts in the United Kingdom.—Experienced men should apply immediately to Plant Manager, Tarmac Civil Engineering, Ltd., Ettingshall, Wolverhampton.

**GENERAL FOREMAN REQUIRED** by rapidly expanding civil engineering contractors. Preference given to tradesman with proven ability to supervise and control medium-size contracts. Good salary, expenses, and bonus-on-results.—Apply, in writing, to **NICHOLSON CONSTRUCTION CO., LTD.**, Freeland House, Cranleigh, Surrey.

**JUNIOR ENGINEER AND SURVEYING ASSISTANT REQUIRED** by estate development company. Experienced in the use of surveying instruments. The appointment offers excellent opportunities to gain experience in the preparation of layout plans and working drawings, and the supervision of the construction of new roads and sewers.—Apply, stating age, experience, and salary required, to **THE SOUTHEAST-ON-SEA ESTATES CO., LTD.**, 16 Warrior Square, Southend-on-Sea.

## BRITISH LIFT SLAB, LTD.

Structural Engineers.—**BRITISH LIFT SLAB, LTD.** urgently REQUIRE STRUCTURAL DESIGN ENGINEERS and DETAILERS for interesting work in connection with new and revolutionary method of building construction. Experience in reinforced concrete design and detailing essential. Good prospects and conditions, including pension scheme. In small but rapidly expanding company, offered to suitable candidates capable of showing initiative and taking responsibility.—Apply, in writing, to:

Secretary,  
**BRITISH LIFT SLAB, LTD.**,  
395 George Road, Erdington, Birmingham, 23.

**SUB-AGENT/SITE ENGINEER REQUIRED** for road improvement contracts, etc., in Sussex. A permanent, pensionable post awaits a man of about 30 with good grounding in public works, with excellent prospects. Residence in the county will be required and living away from home will not normally be necessary.—Apply in writing to **GERALD TOYNBEE (CONTRACTORS)**, LTD., Barnham, near Bognor Regis, Sussex.

## APPOINTMENTS VACANT

**ROADS MANAGER**.—Old-established company REQUIRES MANAGER to take full control of department operating in the North-East. Experience in all types of surfacing essential.—Write, giving full details, to **Box V.3327, "The Contract Journal."**

## WIMPEY

**ENGINEERS** for site investigations.—Extension of activities has given rise to vacancies for ENGINEERS for supervision of site investigations, including office and site work, analysis of test soils, preparation of engineering reports. Applicants should preferably hold a recognised qualification and be prepared to travel for short periods in the U.K. and overseas. Invaluable experience with a good future in foundation engineering.—Write to:

**GEORGE WIMPEY AND CO., LTD.**,  
Central Laboratory, Springfield Road, Hayes, Middx.

**SURVEYOR**. Assistant with experience in preparing interim valuations and site measurements on civil engineering works. Pension scheme in operation; progressive staff appointment.—Applications in writing, stating age, experience, and salary required, to **J. L. EVE CONSTRUCTION CO., LTD.**, 17 Hillside, Ridgway, Wimbledon, S.W.19.

**WANTED**, experienced QUANTITY SURVEYOR for contractors' head office in Cumberland. Must have sound knowledge of site measuring, valuations, final accounts, etc.—Apply, stating age, experience, and salary required, to **JOHN TWINAME, LTD.**, Brigham, near Cockermouth.

## CIVIL ENGINEER

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For Advertisements received too late for classification see page 49

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TENDERS are invited for the PURCHASE from the Corporation of TWO MULTI-STAGE WATER PUMPS by The Harland Engineering Co. Ltd.  
The Pumps are complete with 25-h.p. Electric Motors, Starters, Contact Breakers and Miscellaneous Lengths of Cable, Joint Boxes and Pipework, etc. Schedules of the Equipment and Forms of Tender can be obtained from J. N. BENTHAM, M.I.Mun.E., Borough Surveyor and Water Engineer, Town Hall, Whitehaven, and should be returned not later than 20th JANUARY, 1961.  
The Equipment can be inspected by appointment with the Borough Surveyor, Town Hall, Whitehaven. The Corporation does not bind themselves to accept the highest or any Tender.

W. H. J. BROWNE,  
Town Clerk.  
Town Hall,  
Whitehaven.  
30th December, 1960.

#### CITY AND COUNTY OF THE CITY OF LINCOLN.

##### SEWAGE PUMPING STATION.

##### REFUSE DESTRUCTOR.

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Tenders, endorsed "Sewage Pumping Station—Disposal of Equipment," must be delivered to the undersigned not later than First Post, SATURDAY, 21st January, 1961.

The Council do not bind themselves to accept the highest or any Tender.  
J. HARPER SMITH,  
Town Clerk.

Town Clerk's Office,  
Saltergate,  
Lincoln.

#### HORNCHURCH URBAN DISTRICT COUNCIL.

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By Order of the Secretary of State for War.  
E. — R.

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THURSDAY, 26th JANUARY, 1961.

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## 350 W. V. GIERKE

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**COPY TO:** [redacted] - [redacted] - [redacted] - [redacted] - [redacted]

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黄小强	男	48			

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1987 年 10 月 1 日起施行

1. The first part of the document is a letter from the President of the United States to the President of the Senate, dated January 1, 1901. The letter is signed by William McKinley and is addressed to the President of the Senate. The letter is a copy of a letter that was sent to the President of the Senate by the President of the United States. The letter is a copy of a letter that was sent to the President of the Senate by the President of the United States.

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Source: *Journal of the American Statistical Association*, 1997, 92, 1037-1046.

experienced in the use of the computer. The results of the study are discussed in terms of the implications for the design of computer-based systems for the management of the construction process.

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GENERAL TAYNE  
MORNING NEWS

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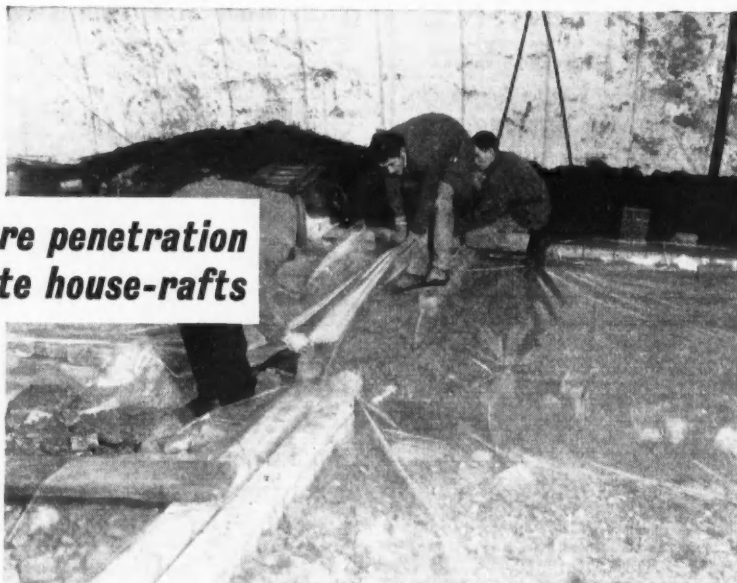
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## COUNTY BOROUGH OF WEST HAM.

### LITTER BINS—FIBREGLASS.

TENDERS invited for SUPPLY of approx. 900 LITTER BINS (Glass Fibre).  
Tender Forms and further particulars obtainable from Borough Engineer, Town Hall, Stratford, E.15.  
Tenders, in plain sealed envelopes (to be supplied), returnable by 10 a.m. on 20th JANUARY, 1961.  
The Corporation do not bind themselves to accept the lowest or any Tender.

G. E. SMITH,  
Town Clerk.

West Ham Town Hall,  
Stratford, E.15.

## BOROUGH OF LUTON.

### LUTON MUNICIPAL AIRPORT.

#### PROPOSED CORPORATION HANGAR.

TENDERS invited for CARRYING OUT CIVIL ENGINEERING WORKS in connection with the ABOVE PROJECT.

The work includes the Foundations and Floor Slabs for a 200ft. span Hangar and Annexes, extensive Apron and Taxiway Works, Drainage, and appurtenant works.

Tender documents from Borough Engineer, Town Hall, Luton, on payment of £2 2s. deposit, returnable after receipt of a bona-fide Tender not subsequently withdrawn. Cheques payable Luton Corporation.  
Tenders to TOWN CLERK, Town Hall, Luton, by Noon, FRIDAY, 27th January, 1961.

## BOROUGH OF UXBRIDGE.

### CONTRACT NO. 471.

#### NORTH HILLINGDON SURFACE WATER

#### DRAINAGE—HILLINGDON COURT PARK RELIEF SCHEME.

The BOROUGH COUNCIL invites contractors with wide experience of similar work who are willing to TENDER for the ABOVE CONTRACT, to submit their names and give full details of such experience to HAROLD E. G. STRIPP, A.M.I.C.E., Borough Surveyor, 263 High Street, Uxbridge, not later than the First Post on 18th JANUARY, 1961.

The works will comprise the Laying of some 1,500 lin. yd. of 36 in. dia. to 27 in. dia. Concrete Tubes, together with Manholes, Gullies, 6 in. dia. Connections, and ancillary works.

From the names submitted, a selected list of contractors will be chosen and subsequently provided with the Bills of Quantities and other Tender documents.

TOWN CLERK.

Council Offices,  
265 High Street,  
Uxbridge, Middx.

## CITY OF BATH.

### BRADFORD ROAD AND FOX HILL SURFACE WATER DRAINAGE.

TENDERS are invited for LAYING approx. 2,000 yd. of 9 in., 12 in. and 15 in. SURFACE WATER SEWERS, together with 22 Manholes and other incidental works.

The Specification, Bill of Quantities, General Conditions and Form of Tender may be obtained from the City and Waters Engineer, Guildhall, Bath, on payment of a deposit of £2 2s., which deposit will be refunded on receipt of a bona-fide Tender.

Tenders must be delivered, in the envelope provided, to the Town Clerk, not later than Noon on MONDAY, 6th February, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

Guildhall,  
Bath,  
29th December, 1960.

## CONSETT URBAN DISTRICT COUNCIL.

### CONSTRUCTION OF SWIMMING BATHS.

TENDERS are invited from competent civil engineering contractors for the CONSTRUCTION AND ERECTION OF NEW SWIMMING BATHS and ancillary works at SHERBURN PARK, Consett.

Applications for the Tender documents should be made to the Council's Architects, MESSRS. J. G. L. POULSON, F.R.I.B.A., 54-56 Albert Road, Middlesbrough, and should be accompanied by a deposit of £3 3s. (made payable to Consett Urban District Council), which will be returned on receipt of a bona-fide Tender.

Bills of Quantities will be available for dispatch by the 10th January, 1961, and Tenders, in plain envelopes marked "Tender for Swimming Bath," must be delivered to the undersigned not later than 4.30 p.m. on the 3rd FEBRUARY, 1961.

The Council does not bind itself to accept the lowest or any Tender.

J. QUINN,  
Clerk of the Council.  
Council Offices,  
Medomsley Road,  
Consett,  
Co. Durham.

## STANDISH-WITH-LANGTREE URBAN DISTRICT COUNCIL.

### ANNUAL TENDERS.

TENDERS are invited for the SUPPLY AND DELIVERY of the FOLLOWING MATERIALS for the year commencing 1st April, 1961—

- (1) Tarmacadam, Bitumen Macadam and Cold Asphalt.
- (2) Bituminous Emulsion.
- (3) Petrol and Diesel Fuel.
- (4) Concrete Kerbs, Flags and Edging.
- (5) Stoneware Pipes, Fittings and Gullies, including Precast Concrete Gullies.
- (6) Iron Castings (Gully Grates, Manhole Covers, etc.).
- (7) Road Stone.
- (8) Sand, Coarse Aggregate and Cement.
- (9) Coal and Coke.

Forms of Tender, Specification and General Conditions of Contract may be obtained from Mr. HAROLD KNOWLES, A.M.I.Mun.E., A.M.Inst.H.E., Surveyor and Water Engineer, Ashfield House, Standish, on receipt of a stamped and addressed foolscap envelope.

Tenders, enclosed in a plain sealed envelope, endorsed "Annual Tenders," and indicating the contract number, must be delivered to the undersigned not later than 11th FEBRUARY, 1961.

D. CHISHOLM,  
Clerk of the Council.  
Council Offices,  
Ashfield House,  
Standish,  
Near Wigan, Lancs.  
5th January, 1961.

## COUNTY BOROUGH OF SOUTHEAST-ON-SEA.

Contractors interested in submitting a TENDER for the CARPETING of EXISTING and NEW CARRIAGEWAYS, and incidental Works in connection therewith, should submit their names, together with a deposit of £2, before 11th JANUARY, 1961, to the Borough Engineer and Surveyor for inclusion on a list of contractors from whom Tenders will be invited. The deposit will be refunded on receipt of a bona-fide Tender and/or the return of all loaned documents.

Sealed Tenders, addressed to the undersigned and endorsed "Carpeting of Carriageways," are to be delivered to this office by 3 p.m. on a date to be specified, and no Tender received thereafter will be considered.

No Tender will be received except in the special envelope provided, which shall not bear any name or mark indicating the sender.

The Corporation do not bind themselves to accept the lowest or any Tender.

Municipal Buildings,  
Southend-on-Sea,  
21st December, 1960.

## SWADLINCOTE URBAN DISTRICT COUNCIL.

### FOOTPATH WORKS, WOOD LANE, NEWHALL.

TENDERS are invited, on a FIXED-RATE BASIS, for the RE-KERBING of WOOD LANE, NEWHALL. The Work comprises the Taking Up of Old Kerbs, and Laying of approximately 1,000 yd. of New Concrete Kerbs, Reconstruction of the Footpath in Bituminous Macadam, together with all ancillary Works.

Contract documents may be obtained from the Engineer and Surveyor, Bank House, Midland Road, Swadlincote.

Completed Tenders should be enclosed in plain sealed envelopes endorsed "Tender for Footpath Works, Wood Lane, Newhall," and should be delivered to the office of the undersigned not later than the 14th JANUARY, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

C. D. HULL,  
Clerk of the Council.  
Clerk's Office,  
Council Offices,  
Midland Road,  
Swadlincote,  
19th December, 1960.

## SHOREHAM-BY-SEA URBAN DISTRICT COUNCIL.

### HIGHWAYS ACT, 1959. PART IX.

#### (CODE OF 1892.)

(A) ADUR AVENUE (PART); (B) HAMMY LANE (PART); (C) FAIRFIELD CLOSE.

The Council invites TENDERS for the MAKING-UP of the ABOVE STREETS. The main works involved are as follows: (a) 880 sq. yd. of Footpath Reconstruction, 270 sq. yd. of Concrete Carriageway Construction, Minor W. Drainage Works, and other ancillary items; (b) 675 sq. yd. of Footpath Reconstruction, 1,050 sq. yd. of Concrete Carriageway Construction, 1,000 sq. yd. of Carriageway Surfacing, 250 lin. yd. of Kerbing, Minor S.W. Drainage Works, and other ancillary items; (c) 785 sq. yd. of Footpath Reconstruction, Minor S.W. Drainage Works, and other ancillary items.

The Contract Drawings and Conditions of Contract may be inspected, and the Contract documents obtained, at the Offices of the Council's Surveyor, MR. W. H. FRASER, M.I.Mun.E., St. Wilfrid's, Shoreham-by-Sea.

Tenders must be delivered to the undersigned, in plain sealed envelopes endorsed "Private Street Works," and bearing no indication whatsoever of the sender, not later than 12 Noon on THURSDAY, 2nd February, 1961.

The Council does not undertake to accept the lowest or any Tender.

R. H. DAVIS,  
Clerk of the Council.  
Town Hall,  
Shoreham-by-Sea,  
Sussex,  
December, 1960.

## MALVERN URBAN DISTRICT COUNCIL.

### EXTERIOR PAINTING OF 160 HOUSES AND FLATS.

TENDERS are invited for the EXTERIOR PAINTING of 160 HOUSES and FLATS on the POUND BANK ESTATE, Malvern.

The Specification and Form of Tender are obtainable from MR. D. WHITE, Housing Manager, The Grange, Grange Road, Malvern, with whom arrangement may also be made for inspection of the properties involved.

Sealed Tenders, in the envelopes provided, must be received by me not later than Noon on MONDAY, 13th February, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

J. BULMAN,  
Clerk of the Council.  
The Council House,  
Malvern,  
30th December, 1960.

## FAREHAM URBAN DISTRICT COUNCIL.

### IMPROVEMENT TO CATSFIELD ROAD, FAREHAM.

TENDERS invited for ABOVE WORK, consisting of Widening and Realignment of  $\frac{1}{2}$  mile of Carriageway and Construction of Footpaths, Surface Water Drainage, and Verges.

Documents from Engineer and Surveyor, Westbury Manor, Fareham, on deposit of £2.

Tenders to me by 10 a.m., WEDNESDAY, 25th January, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

B. W. RANDS,  
Clerk to the Council.  
Merton,  
5 Grove Road,  
Fareham, Hants.

## STOCKPORT CORPORATION.

TENDERS invited for the FOLLOWING SUPPLIES for a period of 12 months from 1st April, 1961—

- (1) Road Materials; (2) Stone Flags and Kerbs; (3) Concrete Flags and Kerbs; (4) Cold Emulsion; (5) Pitch, Creosote Oil and Refined Tar; (6) Granite Chippings; (7) Limestone Chippings and Lime Ash; (8) Crushed Gravel; (9) Portland Cement; (10) Washed Sand; (11) Iron Castings; (12) Stoneware Pipes, etc.; (13) Street Lighting Equipment; (14) Electric Lamps; (15) Gas Mantles, Chokes, Capacitors and Electric Time Switches; (16) Gas Mantles.

Specification and Tender Forms, etc., from BOROUGH SURVEYOR, Town Hall, Stockport.  
Tenders returnable by SATURDAY, 4th February, 1961.

## BOROUGH OF SLOUGH.

### CONSTRUCTION OF FORECOURTS AND GARAGE BASES.

TENDERS are invited for the CONSTRUCTION of approximately 7,000 sq. yd. of TARMACADAM FORECOURT, 9,200 sq. yd. of CONCRETE FORECOURT, 6,900 sq. yd. of CONCRETE GARAGE BASES, and ancillary Works on VARIOUS COUNCIL HOUSING ESTATES.

Specification, Bill of Quantities and Form of Tender obtainable from BOROUGH ENGINEER, Town Hall, Slough, Bucks., on payment of a deposit of Two Guineas, which will be refunded on receipt of a bona-fide Tender and the return of all documents. Drawings and Conditions of Contract may be inspected at the Borough Engineer's office during normal office hours. Tenders, on the prescribed form, must be returned in the envelope provided not later than Noon on WEDNESDAY, 25th January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

## BOROUGH OF SLOUGH.

### CONTRACT FOR LAYING OF WATER MAINS.

FIXED-PRICE TENDERS are invited for the LAYING of 3 in., 4 in., 6 in., and 9 in. WATER MAINS and appurtenant Works from 1st April, 1961, to 31st March, 1962, within the Council's Statutory Area of Water Supply.

Specification, Schedule of Rates and Prices, General Conditions of Contract, Tender Forms, etc., obtainable from BOROUGH ENGINEER, Town Hall, Slough, Bucks., on payment of a deposit of Two Guineas, which will be refunded on receipt of a bona-fide Tender and the return of all documents.

Tenders must be returned in the envelope provided by Noon on WEDNESDAY, 1st February, 1961.

The Council does not bind itself to accept the lowest or any Tender.

## BOROUGH OF SLOUGH.

### HIGHWAYS CONSTRUCTION AND IMPROVEMENT.

TENDERS are invited for CARRYING OUT the FOLLOWING WORKS from 1st April, 1961, to 31st March, 1962, on a Schedule of Prices—

Footway and Carriageway Reconstruction; Kerbing and incidental Works; Surface Water Drainage and Sewerage Works.

Specification, Schedule of Prices, Tender Form and details of the proposed works obtainable from BOROUGH ENGINEER, Town Hall, Slough, Bucks., on payment of a deposit of Two Guineas, which will be refunded on receipt of a bona-fide Tender and the return of the documents.

Tenders must be returned in the envelopes provided by Noon on WEDNESDAY, 25th January, 1961.

The Council does not bind itself to accept the lowest or any Tender.

## BOROUGH OF BEBINGTON.

### SUPPLY OF SERVICES AND MATERIALS.

TENDERS are invited for the UNDERMENTIONED ITEMS for the year ending 31st March, 1962—

- (1) Ashes.
- (2) Bituminous and/or Tarred Macadam.
- (3) Broken Stone and Chippings.
- (4) Cement.
- (5) Cold Asphalt.
- (6) Concrete Flags.
- (7) Concrete Kerbs.
- (8) Petrol and Oils, etc.
- (9) Sand, Gravel and Winter Grit.
- (10) Tar and Cold Emulsion.
- (11) Cleaning of Windows.

Specifications and Forms of Tender and any other particulars may be obtained on written application to the Borough Engineer and Surveyor, Town Hall, Bebington, Wirral.

Tenders, endorsed "Tender for —," in plain sealed envelopes, which must not bear any name or mark indicating the sender, to be received by me not later than FRIDAY, the 20th January, 1961.

Contractors whose Tenders are accepted may be required to enter into contracts containing, inter alia, clauses as to the standard rate of wages, and bonds for the due performance of the contracts.

The Council do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right to accept any Tender in whole or part.

G. CHAPPELL,  
Town Clerk.  
Town Hall,  
Bebington,  
29th December, 1960.

## BOROUGH OF SHREWSBURY.

### ANNUAL TENDERS.

TENDERS are invited for the SUPPLY of the FOLLOWING for the year ending 31st March, 1962—

- | Ref. | Description                                       |
|------|---|
| (1)  | Stoneware Pipes and Fittings.                     |
| (2)  | Bricks.   |
| (3)  | Cement.   |
| (4)  | Dustbins.   |
| (5)  | Manhole Covers and Gully Grates.                  |
| (6)  | Cleft Chestnut Pale Fencing and Oak Posts.        |
| (7)  | Sanitary Ware and Fittings.                       |
| (8)  | Building Sand.                                    |
| (9)  | Concrete Aggregates.                              |
| (10) | Concrete Kerbs and Paving Flags.                  |
| (11) | Asbestos-Cement Rainwater Goods.                  |
| (12) | Concrete Road Gullies.                            |
| (13) | Hardcore Chippings and Gritting Gravel.           |
| (14) | Tarmacadam, Bitumen Macadam and Coated Chippings. |
| (15) | Oils and Paraffin.                                |
| (16) | Hand Brooms.                                      |

Particulars and Forms of Tender for items required may be obtained from the Borough Surveyor, Guildhall, Shrewsbury, on receipt of a stamped addressed foolscap envelope.

Tenders, in the envelope provided, without name or mark indicating sender, to be received by the undersigned not later than 10 a.m. on MONDAY, 6th February, 1961.

S. R. H. LOXTON,  
Town Clerk.  
Guildhall,  
Shrewsbury.

## COVENTRY CORPORATION.

### CONSTRUCTION OF PEDESTRIAN SUBWAY.

TENDERS are invited from contractors experienced in reinforced concrete and highway works, for the CONSTRUCTION of IN-SITU REINFORCED CONCRETE OF PEDESTRIAN SUBWAY, with Approach Ramps and Steps, crossing COVENTRY BY-PASS TRUNK ROAD.

Quantities involved include approx. 1,000 cu. yd. Excavation, 300 cu. yd. Concrete, 1,000 sq. yd. Formwork.

Tender documents obtainable from CITY ENGINEER, Council House, Coventry, on payment of £5, returnable on receipt of bona-fide Tender by 1st FEBRUARY.



## In the main it's money

Over 4 miles of 18 inches diameter and  $\frac{3}{4}$  mile of larger and smaller diameter Staveley cast iron pipes help to take the waters from the new Ogston Reservoir to the consumer.

Staveley's advice on any aspect of cast iron pipes and mainlaying is often of economic value—and in the main that is money.



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FOR WATER, GAS & SEWAGE**

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# THE CONTRACT JOURNAL

INCORPORATING  
THE BRITISH CONSTRUCTIONAL ENGINEER AND THE CONTRACTOR

## THE CONTRACT JOURNAL

Incorporating  
THE BRITISH CONSTRUCTIONAL ENGINEER  
and  
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### Advertisements

Advertisement rates may be obtained on application to R. Binfield, Advertisement Manager.

## THE SILENT REVOLUTION

IT seems a long step today from the advice about canal construction given in 1819 which urged the engineer "to draw up a short but explicit contract to be signed by the contractor." As civil engineering contracts grew longer, they did not necessarily grow more explicit. Nor did they become more equitable. On the contrary, the contractor was placed in an entirely subordinate position, the engineer's decision being final and without appeal on each and every matter, whether it was the contractor's responsibility or not.

Contractors were strongly opposed to this position, as evidenced by the pungent words in the objects of the Association of Railway Contractors formed in 1838 which sought "to obtain an equitable, instead of, as exists at present, an arbitrary and unjust form of contract." But little progress was achieved and one of the major objects of the Federation of Civil Engineering Contractors, formed in 1919, was "to settle and secure a model form of contract embodying equitable conditions."

As Mr. A. M. Holbein, the chairman of the Federation's Contracts Committee, explained in his introductory paper to the recent discussion on the I.C.E. Conditions of Contract at the Institution of Civil Engineers, the 19th century system was only tolerable because in most cases engineers used their virtually dictatorial powers fearlessly and fairly and acted in a judicial capacity when the interests of contractors and employers diverged. Gradually, however, the overriding authority of the engineer was eroded, largely due to the fact that employing authorities set up their own specialist engineering, accounting and legal departments to which the engineer had to answer instead of being free to exercise his own discretion. It thus became essential to remove the fundamental insecurity of the contractor's position and the Federation's long uphill struggle for a model form of contract began.

There are obvious advantages in having standard general conditions of contract. The provisions become well known and understood and all the unnecessary work in drafting, digesting and working to individual sets of conditions for different employing authorities is eliminated. Yet the old tradition was so ingrained that even this proposition was by no means generally accepted when the I.C.E. Conditions of Contract were first issued 14 years ago.

The measure by which thinking has changed in that short space of time can be gauged from the fact that the I.C.E. Conditions now sell 40,000 copies per annum and that, at the recent Institution discussion, only one lone voice was raised against the idea of a standard form.

But the real revolution wrought by the I.C.E. Conditions of Contract goes much deeper than this. The negotiation of these conditions represented, in effect, a fundamental re-appraisal of the relative positions of the engineer and contractor. Under the conditions the inherent risks involved in civil engineering work were fairly apportioned between the parties to the contract, purely speculative risks were eliminated and, most important of all, the right to independent arbitration in each and every matter was accorded to both the employer and the contractor.

There were many on the engineering side who feared that the principle of open arbitration would lead to a great increase in the number of arbitrations. But in practice this has not happened. The very existence of the right to arbitrate by either side seems to have encouraged the internal settlement of matters in dispute. Moreover, in the unlikely event of an arbitration arising, the conditions safeguard the employer's position by providing that there shall be no delay in the completion of the work pending the arbitration.

The removal of speculative risks cannot but have been to the benefit of employers since truly competitive tenders cannot be submitted if the work involves an element of pure gamble. The contractor must obviously cover himself against all possible risks and if, in the event, a speculative risk does not materialise, the employer none the less pays for it. The basis of the I.C.E. Conditions whereby such speculative risks are excluded from the tender and paid for as an extra if and when they arise is clearly preferable.

It is, of course, possible to raise points on the I.C.E. Conditions from the points of view of both the engineer and the contractor. Some points were indeed raised at the recent Institution discussion, although most of them seemed to be the result of misunderstanding of the provisions and showed that engineers as well as contractors sometimes fail to read their contract documents properly. The main point, however, as Sir Arthur Whitaker

(Concluded at foot of next page)

# A LAWYER CONSIDERS . . .

## Some Problems of Firm-Price Tendering

**T**HE advent of firm-price tendering has brought to the fore certain problems which were not so acute under contracts with fluctuation clauses. It might be of interest if one or two of these problems were discussed.

### Preliminary Conditions

When firm-price tendering was virtually imposed on the building industry by the Government, contractors tried to insist on certain pre-requisites; the most important of these were that the contract must not last more than two years from the date for delivery of tenders, that the tender must be accepted within two months and possession given and that the work must be fully documented so that variations are kept to a minimum and necessary architect's instructions are available when needed. These pre-requisites are not often fulfilled; and unless the contractor has incorporated them in the tender that has been accepted and converted into a binding contract then he can do nothing about enforcing these pre-requisites or claiming if they are not fulfilled. Of course, some of these pre-requisites will be incorporated in the standard conditions of contract but the point to be stressed is that unless they are made part of the contract they are little more than pious hopes. Thus, it is no use a contractor complaining that his job has lasted into a period when costs have risen because he only got possession six months after his tender was accepted, if he has not made possession within two months of acceptance of his tender a condition of his contract; if he has taken this precaution then he has good grounds for claiming the extra cost he has incurred.

### Position of the Priced Bill

As mentioned earlier, one of the most important requirements of firm-price contracting is that the job has been fully planned so that variations of any substance will not occur. But this requirement is unfortunately one of those more honoured in the breach than in the observance. That being so, and variations under firm-price contracts being hardly less frequent than under contracts with fluctuation clauses, the position of the priced bill, the chief contract document for valuing variations, becomes a document of even greater importance than before firm-price tendering.

It is the practice for quantity surveyors when considering a tender which has been accepted provisionally to see the contractor's priced bill and check that the bill total equals the lump-sum tender figure. This practice has been recognised in the Joint Consultative Committee's influential Code of Tendering Procedure and paragraph 14 of the Code gives some recommendation as to the method of dealing with the situation where the bill totals differ from the lump-sum figure. It is, however, clear that the R.I.B.A. Contract itself does not lay down that the priced bills (one copy of which must by clause 2 be supplied to the architect) must when totalled equal the lump-sum price inserted

in paragraph 2 of the Articles of Agreement. It is therefore an extra-contractual exercise for the quantity surveyor to adjust the rates in the priced bill but one which most contractors would not quarrel with; the practice is too well-known to cause query.

However, under a firm-price contract the valuation of variations is extremely important because increases in labour and material costs are not automatically granted as part of the cost of the variation. Contractors might therefore feel that bill prices which add up to, or have been adjusted to add up to, the lump sum price are really quite insufficient for use when valuing variations under a firm-price contract. It is therefore interesting to appreciate that contractors can submit a lump-sum price on R.I.B.A. conditions and also a priced bill which does not total up to the lump sum price but which does provide rates for valuing variations which are adequate—or even something more than adequate in order to discourage the ordering of variations. Building owners would therefore be faced with two prices from the contractor; one a lump sum price for doing the job shown on the drawings and described in the bills, the other a set of prices at which variations will be carried out. If the latter prices are high the building owner may well be compensated by a low lump-sum price but both the owner and his architect would be made clearly aware of the high cost of varying the original works ordered by the high rates inserted in the priced bill.

If this method of tendering were adopted then the valuation of variations under a firm-price contract, or at least of variations involving work similar to that described in the bills, might be simplified. But what if this method is not adopted—does the existing R.I.B.A. Contract provide a sufficient method for valuing variations under a firm-price contract?

### Valuing Variations

It is useful to bear in mind four different situations when considering this question. Firstly, those variations which are carried out when costs have not risen since the acceptance of the tender and which do not cause the contract period to be extended; secondly, those variations which are carried out when costs have risen but which again do not cause the contract period to be extended; thirdly, those which are carried out before costs have risen but which are extensive enough to cause the contract period to be extended into a period when costs have risen; and lastly, those which are carried out when costs have risen and also cause the contract to be so extended.

The contractor must pay special attention to the variation valuation rules in clause 9 of the R.I.B.A. Contract. The first rule is to use the bill prices; if the contractor's labour and material costs are not up when the variation is carried out then the bill prices would probably be satisfactory. But if the labour and material costs have risen when the varia-

tion is carried out then the bill prices will probably not be satisfactory and the first rule should not apply. The second rule says that where extra work is not of a similar character or executed *under similar conditions* as work priced in the bills, the bill prices are to be the basis of prices for the variation *so far as may be reasonable*, failing which a fair valuation is made. The words in italics are the crucial ones; the work, one could argue, is not being executed under similar conditions as envisaged in the bills because the prices put in the bills were based on costs which no longer apply and thus the conditions under which the variation is to be carried out are dissimilar; moreover, if costs have gone up, it cannot be regarded as reasonable to keep the contractor to the bill prices; a fair valuation will therefore be the proper way of valuing the variation and this will obviously take into account the labour and material costs when the variation was carried out.

It is therefore being suggested that if, as is likely under existing tendering practice, the bill prices total up to the lump-sum price then the probability is that the bill prices are not adequate for pricing variations under the contract when labour and materials costs have gone up; if, however, a bill is priced to cover any reasonable rises in costs which might occur and not to equal the lump-sum price then the bill prices would usually be adequate; not many contractors will, however, have such adequate bill prices and therefore they should, if costs have risen when the variation is carried out to a level above those ruling at the tender date, always seek to get variations valued under clause 9 (b), that is the second valuation rule. The argument given above may help to secure this. This argument is not, however, conclusive; the word "conditions" might mean, or be construed by a court to mean, the actual site or physical conditions and not the economic conditions which govern the price of building work. That being so it is the more necessary for contractors under firm-price contracts who agree, as most do, to have their bill prices total, or be adjusted to total, the lump-sum price to ensure that those bill prices are adequate to provide a basis for valuing variations. If to do this means an increase in tender prices then that might not be altogether a bad thing; the building owner has after all two alternatives, either to abandon asking for firm prices or else to accept a priced bill which is a schedule of rates adequate to price fairly any variations which occur under the contract.

It remains to consider the valuation of those variations which involve the contractor in working beyond the original contractual completion date and by so doing he finds himself working on the job when he did not expect to and at a time when costs have risen; this may also be combined with the fact that some or all of the variation work is being itself carried out when costs have increased. Assuming that the contractor can, using the arguments given above, get the proper costs of the variation work itself, can he recover for the expense he has been put to by being forced to work longer than he anticipated and into a period when costs have risen? The answer is that the variation will have been the result of an Architect's Instruction under clause 1 of the R.I.B.A. Contract and he would therefore be entitled to claim that the architect should, under the penultimate paragraph of that clause, ascertain the loss or expense beyond that anticipated in the contract in which these instructions have involved the contractor; such loss or expense can either be included as part of the variation valuation or added to the contract sum as a separate amount.

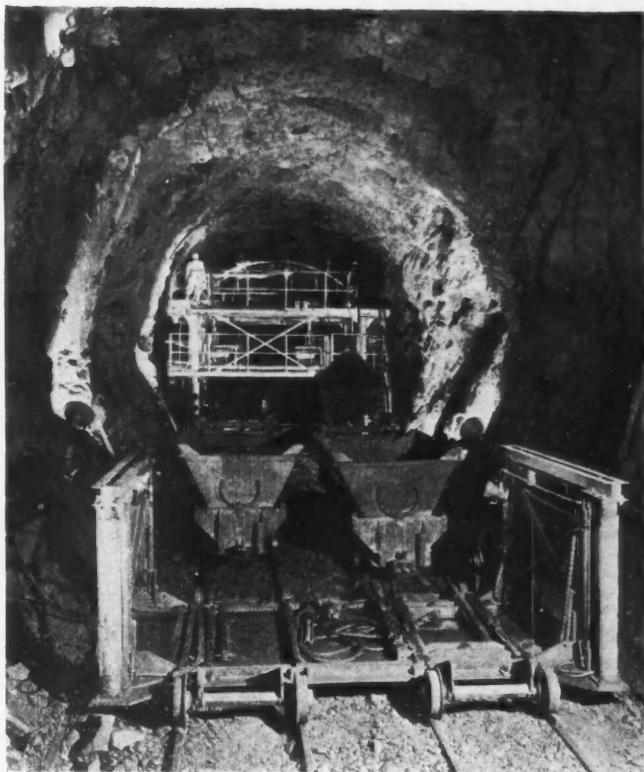
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explained is that, in practice, the Conditions work satisfactorily and have stood the test of time.

According to a recent survey conducted by the Federation of Civil Engineering Contractors, the I.C.E. Conditions of Contract are now used by virtually every local authority carrying out civil engineering works and by all the important public bodies such as the British Transport Commission, the Central Electricity Generating Board and the Dock and Harbour Authorities. But of the Works Departments in the Government, only the Ministry of Transport has so far adopted the Conditions. Is it not time that the other Departments which are responsible for major civil engineering works, such as Sir Arthur Whitaker's old Department, the Admiralty, together with the Air Ministry and other Defence Departments, followed suit?

## INVERAWE HYDRO-ELECTRIC TUNNEL PROGRESS

### Ladder Drilling and Special Explosives Techniques



Tunnel face, showing cross-over shunting mechanism in foreground, and ladder drilling gantry in background

**A**DVANCING an average distance of 11ft. per day, the Inverawe tunnel which is being constructed at Loch Awe, Argyllshire, for the North of Scotland Hydro-Electric Board, will be the largest of its type to be driven for hydro-electric purposes in the United Kingdom.

The Awe Project is designed to harness the water power from an area of 320 square miles and, when completed at a cost of about £24½m., will have a capacity of some 450 megawatts. It is in three main sections, at Cruachan, Nant and Inverawe,

and will include the construction of two dams, a river barrage, three power stations, and several miles of tunnel and access road.

The Cruachan section of the works includes pumped storage plant with an installed capacity of 400,000 kilowatts with machinery of a size and type to make it one of the most advanced pumped storage plants in the world.

To be three miles in length, the tunnel now under construction will carry water from a barrage across the River Awe to a power station at Inverawe. Horse-shoe in shape, it is being excavated to a diameter

of 25ft., and will be 23ft. 6in. in diameter when lined. The route lies through granite beneath a road and railway and through the shoulder of Ben Cruachan.

Work commenced late in 1959, and to date the tunnel has been driven a distance of about 2,700ft. Progress is in the region of about 11ft. a day, one cycle consisting of between three and four hours spent on drilling and firing; three-quarters of an hour, used as a mealtime, waiting for the smoke and dust to clear; and about seven hours spent on mucking-out, setting rail tracks, and generally preparing for the next drilling. Eleven such shift-periods are worked in a week, the best week's run until now being a distance of 123ft.

#### Ladder Drilling

A feature of the tunnelling work is the introduction into this country of a Swedish ladder drilling method developed by Atlas Copco (*The Contract Journal*, December 1, 1960).

The contractors decided to use ladder drilling after a visit to Sweden to study the technique. The new method has been in operation at Inverawe from the junction of the main and access tunnels, and has enabled the operators to bore accurately along the periphery of the tunnel, giving a perceptibly smoother finish to the walls and roof than had been achieved until then by drills mounted on ordinary pusher legs.

A result of this improvement is that considerable savings are expected to be made in the amount of concrete which will eventually be grouted behind the tunnel liner, as a variant of a few inches in the bore of the tunnel would greatly increase the cost of lining with concrete.

A specially designed ladder drilling platform was erected by the contractors in their Edinburgh depot, dismantled for transport to the site, and re-erected in the tunnel. The drills are mounted in special cradles on the platform, which travels along the tunnel on rails set outside the normal twin 3ft. gauge tracks for the spoil skips.

Fourteen drills are operated at one time from the frame, and an average of 94 holes



Top of drilling gantry, with ladder drills mounted to top beams, which are shaped to conform with tunnel roof contour



are drilled for each round, the deepest being 13ft.

For the particular type of granite rock through which the tunnel is being driven the best blasting results, it has been found, are obtained by using specially selected explosives, comprising Gelamex in the wedge and Winrox in the crown and upper walls. The first of these explosives has a nitroglycerine content of 25.7 per cent., and the second an NG content of 19.2 per cent., and their use has greatly helped in maintaining the necessary smooth finish to the tunnel.

In the crown and roof of the tunnel, where delayed shots are arranged, misfires are prevented through the use of Cordtex.

Before firing, the drilling platform is moved back about 200ft. from the face, where it remains during the mucking-out process. This takes about seven hours to complete, and is carried out with two LM 250H Atlas Copco rocker shovels working on the twin tracks which run to the face.

The spoil is thrown by the rocker shovels into 5 cu. yd. capacity tipping wagons towed behind the shovels. When the skip has been filled, it is shunted back a few feet and moved

on to the other track by means of a pneumatic transverser or cross-over, designed and built by the contractors. This system of cross-shunting allows empty skips to take the place of filled ones with the minimum of movement.

The amount of material to be cleared

after firing averages 20 cu. yd. solid per foot advanced, and some 230 cu. yd. of spoil is moved after each round, filling about 90 skips.

Work on the tunnel is scheduled to be finished by the early summer of 1963.

#### Cruachan Dam Road

Another part of the project under construction is a three-mile access road from the Pass of Brander to the site of the Cruachan dam. A contract for this dam is expected to be placed next spring.

The road generally will be 10ft. wide and will consist of 8in. bottoming and a 3in. crushed stone base with a 2½in. surface of Bitmac.

Much of the formation had to be hacked out of an almost vertical rock face, and drainage problems have been accentuated by the steepness of the hillside. At the present time some 11,500ft. of the road has been completed, with about 4,000ft. of route left which it is hoped to construct by Easter.

Large falls of loose rock after blasting have constituted a serious problem, and at one point the fall was so large that it was decided to build the road over the debris, rather than attempt to shift the huge amount of rock involved.

The face of the hillside above the road was extremely weak at this spot, and it was necessary to pin the layers of rock. Holes 1½in. in diameter were drilled through three layers to a depth of between 15-20ft., and these were grouted with concrete, into which was driven dowel bars 1in. thick.

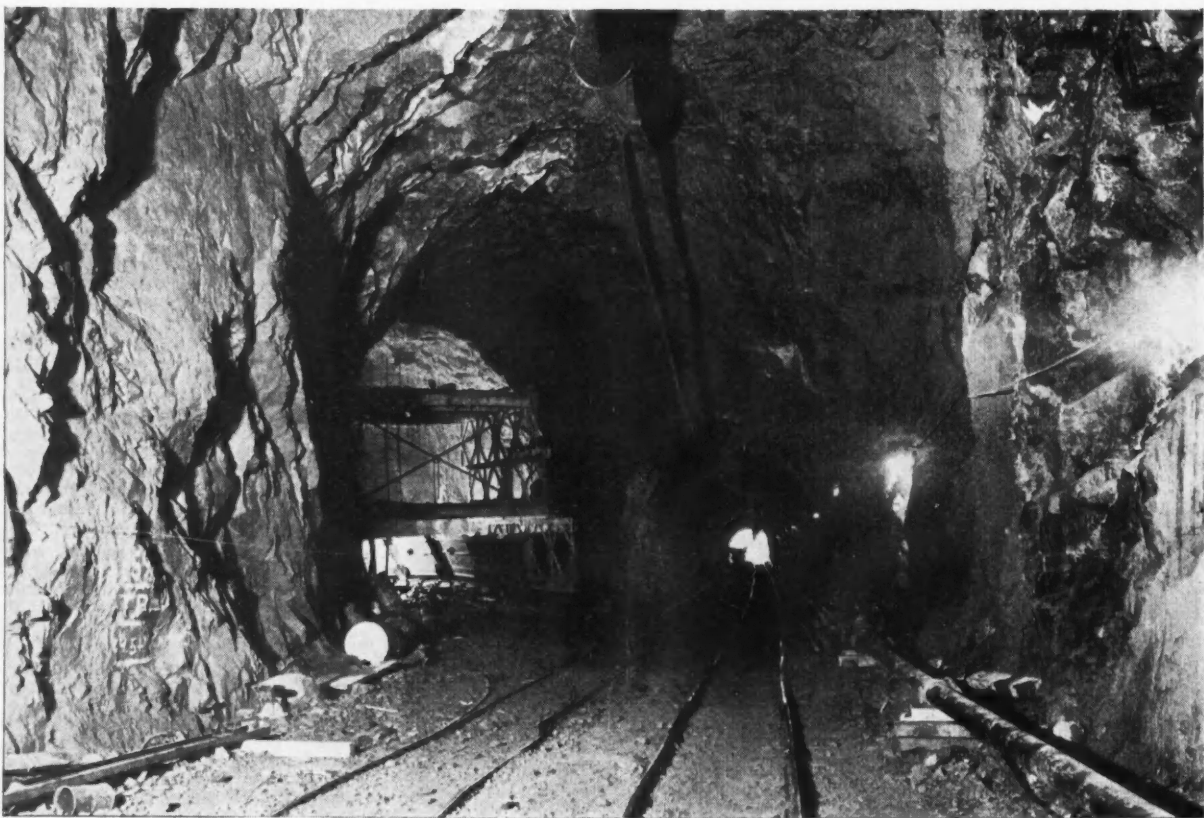
Plant in use on the road includes three tippers; a Caterpillar D4 crawler tractor; a 22RB excavator; and a CP compressor to operate the rock-drills.

#### Consultants and Contractors

The consulting engineers for the Cruachan and Inverawe sections of the project are James Williamson and Partners, Glasgow. The contractors for both the Inverawe tunnel and the Cruachan dam road, to cost a total of about £1½m., are Geo. Wimpey and Co., Ltd., Edinburgh.



View of tunnel from the face, showing the two loaders used for mucking-out



Junction of the main and access tunnels, from which point the ladder drilling started

## A HOIST WITH TWO LIFTING CAGES

By H. G. Vallings, A.M.I.Mech.E.

*This note describes a new type of builders' hoist equipped with two lifting cages, one of which ascends as the other descends. Both can be used for materials, and one is equipped for carrying passengers. When examined at the Building Research Station it was found that certain modifications were necessary for compliance with the Building Regulations. These modifications have been made by the manufacturers.*

**T**HE rate at which materials can be handled with the type of builders' hoist in common use, with one lifting cage, depends on the time taken to load, hoist, unload and lower. With the present trend towards higher buildings, however, the need arises to reduce the time cycle for hoist operation. For the taller buildings it is necessary also to provide a hoist to carry personnel.

In the course of a study of the handling of materials in building in this country and abroad carried out by the Building Research Station, a hoist of foreign make, having two lifting cages, came to light. In this hoist one cage ascends while the other descends, thus permitting loading at ground level and unloading aloft to be done concurrently and thereby reducing the possible working time cycle. When required, one cage may be equipped for carrying personnel as well as goods.

Since no hoist of this description was made in this country, the Building Research Station undertook the examination of one as a part of their research programme. This article gives a description of the machine which it is thought should be of general interest to the building industry.

### Description of Hoist

The hoist examined has two cages each of which can lift 11½ cwt. of materials, and one cage is also equipped as a passenger lift for seven persons. The cages travel in guides on opposite sides of a mast and are suspended by steel ropes wound differentially on two winch drums driven by a common shaft so that, as one cage ascends, the other descends thereby giving a degree of counterbalance. When one cage is equipped for carrying passengers it is suspended by two ropes (see Fig. 1).

Both winches are driven by a 7½-h.p. electric motor fitted with an electro-mechanical brake and controlled by push buttons. The mast can be extended in sections 9ft. 10in. high to give a maximum working height of about 147ft.

The height to which one cage ascends when the other is at the bottom can be adjusted as follows: the materials cage (on the left in Fig. 2) is lowered to the bottom, and a clutch connecting the drive to the winch for this cage is disengaged; the height of the other cage can then be adjusted by operating the control buttons; and at the required height the clutch is re-engaged.

### Method of Erection

After fixing the materials cage to the base unit, which includes the two winch drums and the electric motor, a hand-operated crane is fixed to the cage for erecting the mast. Fig. 3 shows the first section of the mast in place and the

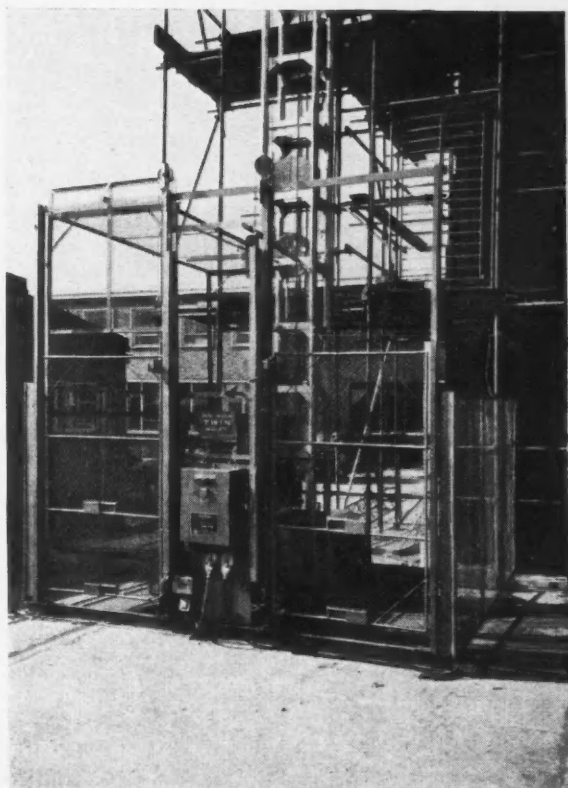


Fig. 2. Access gates and guards at base of hoist. Passenger cage aloft and materials cage nearly lowered

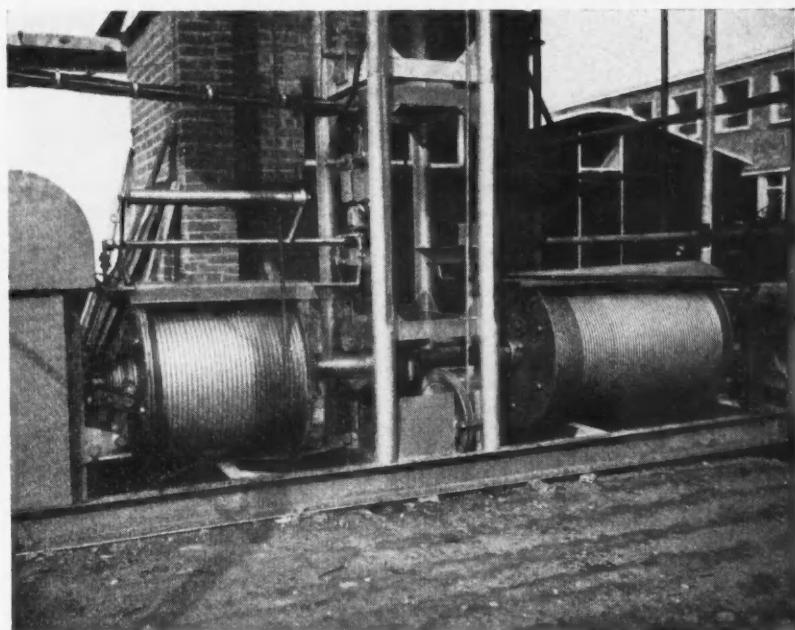


Fig. 1. Two winch drums driven by a common shaft

hoisting rope reeved over a pulley at the top of this section. The cage carrying the next section can now be hoisted under power to a point about half-way up the first section, where it is secured to the mast. The hoist rope is slackened and the pulley removed so that the next section can be placed in position with the crane, as in Fig. 4. The reverse sequence is followed when dismantling.

The mast is free-standing up to 40ft.; beyond this height, the makers recommend that the mast should be tied to the scaffolding or the building at 20ft. intervals.

### Controls and Safety Devices

This hoist is controlled by a set of three push buttons ("up," "down" and "stop") at the base, or by a similar set inside the passenger cage. In the original design a set of control buttons was also provided at each landing stage, to enable a man aloft on a building to adjust the height of the cage to that of a landing stage, and to enable him to call the passenger cage. The Building (Safety, Health and Welfare) Regulations, 1948, require that a hoist shall be operated only from one position at a time: either from the cage only in the case of a passenger hoist; or from one other position only in the case of a cargo hoist. To comply with these regulations, the landing stage controls have been eliminated and modifications have been

made to the control boxes at the base and in the passenger cage so that the push buttons are inoperative unless a key remains inserted in the control box concerned. As only one key will be provided, it will be impossible to operate the hoist from more than one position at a time.

The manufacturers have produced a landing-stage gate for the passenger lift, and have made alterations to the passenger-cage gates so that the hoist cannot be operated unless all gates are shut and no gates can be opened unless the cage is at a landing stage, in accordance with the regulations.

Safety devices to prevent a cage from falling in the event of a rope failure, and to prevent over-run at the top or bottom of the mast are fitted as standard equipment. The hoist has two safety features additional to those required by the Regulations. One is that the gate at the base giving access to the left-hand materials cage must be closed before the hoist can be operated, and opening this gate automatically stops the hoist. The

other is a device that arrests the passenger cage if the speed of descent exceeds the normal by more than one third.

#### Use

The rate at which materials can be handled when using only one cage, as already mentioned, depends on the time taken to complete four operations: loading, hoisting, unloading and lowering. This rate can be doubled when both cages are used, if unloading can be performed in cycle with loading.

In practice, advantage could be taken of this higher output when a considerable quantity of material has to be delivered to a particular height—as when loading out a floor with bricks. When the hoist is required to serve several trades, working on different floors, it may not be worthwhile to make adjustments to the working height of the cages so that loading and unloading can take place simultaneously. Whether such adjustments are worthwhile will depend upon the quantity of materials involved and the frequency of demand by

each trade: Experience will teach the most efficient method of use.

#### Other Models

If required, the passenger cage can be replaced by a cage for materials only. The hoist can also be supplied with a concrete skip on one side and a cage or a counterweight on the other, or with two concrete skips.

A larger model is made capable of working to a height of 380ft. In this model, each cage can lift about 14cwt, or nine persons and is operated independently by a separate motor.

Information regarding the suppliers of hoists, including that described in this article, may be obtained from The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.

#### Acknowledgements

The examination of the hoist described in this article forms part of the programme of research of the Building Research Board and the article is published by permission of the Director of Building Research.

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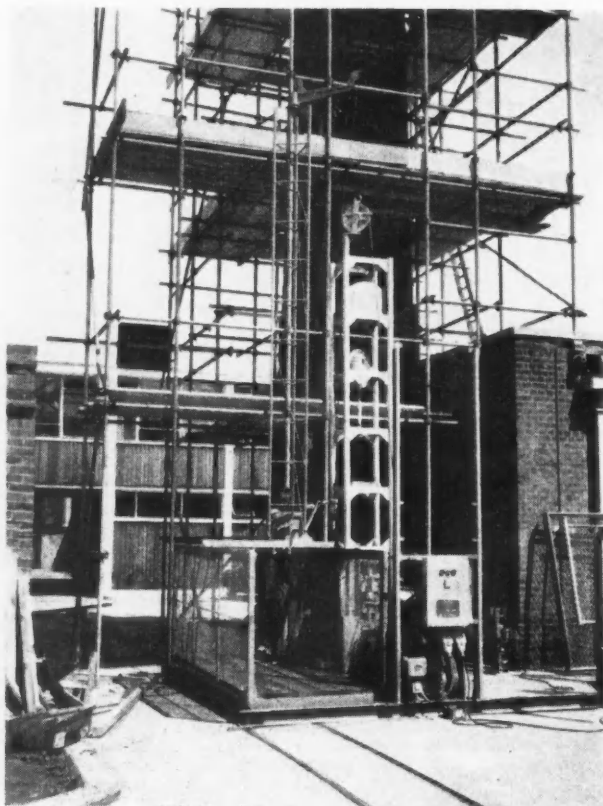


Fig. 3. Hand-operated crane on materials cage for erecting the mast

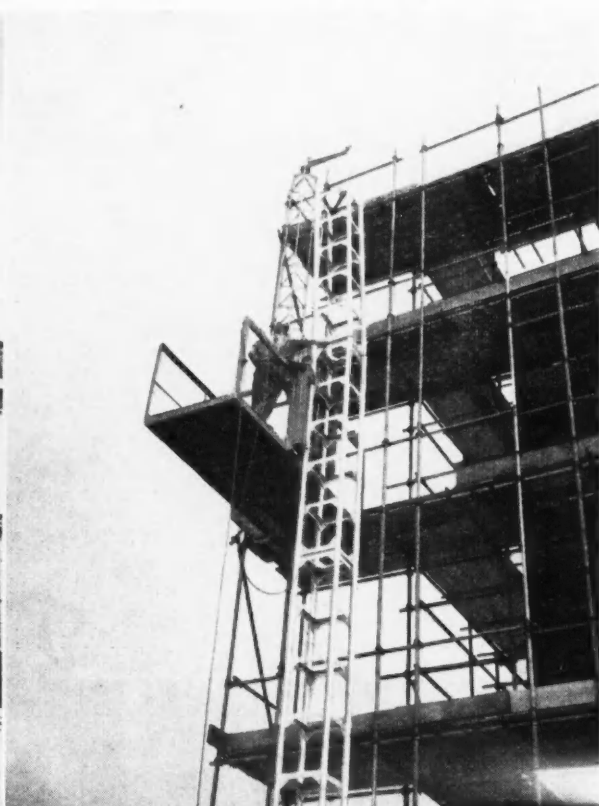


Fig. 4. Adding a section to the mast

## BUILDING WAGES AND HOURS AGREEMENT

### Comments by Employers' President

**C**OMMENTING on the building wages and hours agreement reached by the ad hoc negotiating sub-committee of the N.J.C., the President of the National Federation of Building Trades Employers, Mr. D. E. Woodbine Parish, F.I.O.B., said:

"This agreement on working hours and wages, which is subject to formal approval by the industry's National Joint Council on January 12, involves a standstill in wages—other than the 3d. per hour due in February under the industry's standard sliding scale formula—until the first pay week in October next year, when working hours will be reduced from 44 to 42 and the standard rate of wages for craftsmen will be increased by 6d. an hour. To maintain production and to gain full

advantage of the shorter working hours there is to be, from the same date, a revision of site procedure concerning refreshment breaks and a revision of the present arrangements concerning overtime.

"In agreeing to postpone the changes until October, 1961, the employers and operatives have appreciated the need in the building industry for reasonable periods of stable conditions and that long notice is of value not only to builders tendering on a firm price basis but also to those concerned with the commissioning of building projects.

"Throughout the negotiations the employers have been anxious to ensure that the industry is in a position to recruit its fair share of high calibre school leavers

without unduly raising costs in an industry which does not have to face competition from abroad. They believe that by agreeing these wages and hours changes but postponing the effective date until the winter of next year and by introducing, at the same time, measures to reduce the impact on building costs, they have gone far towards solving the problem."

### SEMTEX START PRODUCTION IN ITALY

Semtex, Ltd., announce the production of plastic flooring materials in Italy.

This is the result of an agreement signed last year with Mazzucchelli Celluloide S.p.A. and Domosic S.p.A. (a Mazzucchelli subsidiary) by which these companies were licensed to manufacture and sell in Italy, Semastic decorative tiles and vinyl asbestos tiles.



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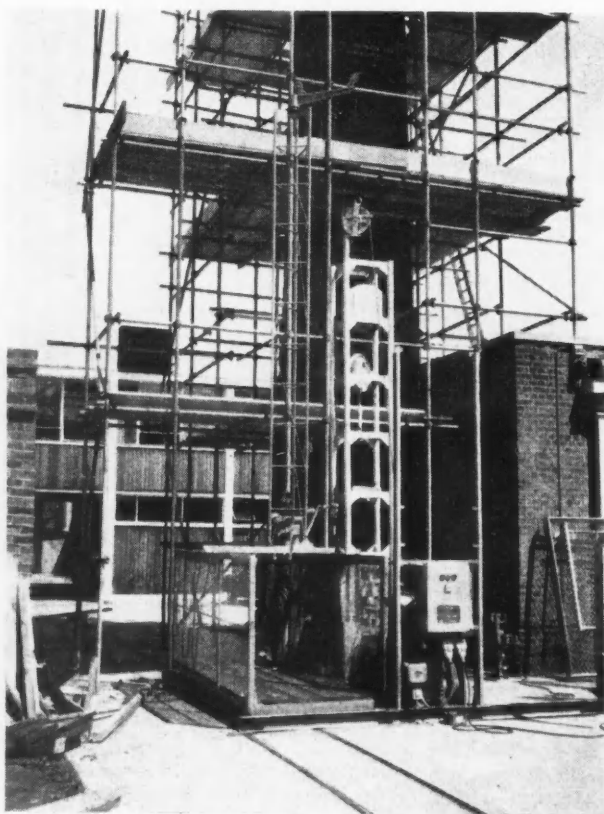


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## CUT IN BUILDING ACCIDENTS "AN URGENT NEED"

### CRITICISM OF LACK OF PRECAUTIONS

That an "urgent and immediate need" exists for an improvement in the accident record of the building and civil engineering industries is the main conclusion in a Ministry of Labour report on safety and health in the industries, published yesterday.

In an introduction to the report, Mr. T. W. McCullough, Chief Inspector of Factories, writes: "There are still far too many accidents on construction work and employers and operatives alike must continue to use every endeavour if real progress is to be made in making the industries safer." The most encouraging development in recent years, Mr. McCullough continues, has been the setting up of a number of safety training centres.

In the years under review, 1954 to 1958, the report itself noted that the number of accidents at building operations had risen from 13,903 in 1954, of which 172 were fatal, to 15,017 in 1958, with 207 fatalities. Both figures being the highest recorded. Similarly, the figures at works of engineering construction were 2,172, of which 42 were fatal, in 1954, and had risen to a peak of 2,329 and 51 respectively in 1958.

### MANY FALLS

Falls from working places provided the highest number of deaths at building operations. These were usually due either to a lack of guard rails and toe boards, or to working platforms of an inadequate width. Falls from sloping roofs were due in the main to a lack of roof ladders or to incorrect anchoring, failure to use a proper working platform, and a shortage of protection around the roof at eaves level. Falls on the flat, although not often resulting in serious injury, produced the highest total of falls. Some of these were caused by bad lighting or by moving loads when vision was obstructed.

Referring to the careless handling of explosives in demolition work, the report suggested that the manner in which explosives were used was sometimes "extremely slack."

Standards of welfare varied greatly from site to site and from employer to employer. The report noted that many building sites were poorly equipped with first-aid requisites in contravention of existing regulations. Messroom standards did not appear to have improved greatly. At some smaller sites they were nothing more than "the most rudimentary shelters." A number of contractors, however, had successfully used mobile trailers as kitchens and canteens before permanent site buildings had been erected.

*Report on Safety and Health in the Building and Civil Engineering Industries 1954-1958 (Cmd. 953, Stationery Office, 1s. 6d.).*

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- 3 Double guard rails, or guard rails plus cross-bracing are standard with SAFWAY.
- 4 The new SAFWAY short length board is the safest form of decking in the world. The boards just drop into place — board end meets board end . . . no overlapping.
- 5 The latest form of SAFWAY Toe Board conforms to the most stringent regulations and is the cheapest in the end . . . gives added safety.
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## MINISTRY OF TRANSPORT'S NEW OFFICES

AS reported recently, the Highways Department of the Ministry of Transport have moved to their new offices at St. Christopher House, Southwark Street, London, S.E.1: the Minister and other senior officers are due to move in this month.

The building, which was described in *The Contract Journal*, December 15, 1960, is made up of four main blocks and, for the time being at least, is Europe's largest office building with 18½ acres of floor space and over 2,000 offices. It is founded on a piling system (about 2,000 piles were used altogether) and consists throughout of in-situ reinforced concrete columns and flat slab floors. Stairs and landings are of precast concrete. Construction through the whole building progressed at the rate of a complete floor every two weeks.

The architect for the scheme is Mr. Morris de Metz, F.R.I.B.A., and the contractors are Token Construction Co., Ltd. The photographs show (below) general view of the East Block and main entrance, and (right) a flank wall clad with precast concrete panels.



## HOW THE ORDER LOAD HAS CHANGED

From a Special Correspondent

THE latest figures of orders and output of new work issued by the Ministry of Works (*The Contract Journal*, December 22) enable a good assessment to be made of the change in the contractors' order load since 1957 when the order figures were first collected.

It has to be mentioned that the Ministry of Works' figures of new orders are collected on a slightly different basis from their output figures and for that reason any conclusions drawn from a comparison of the two sets of figures must be treated with reserve. The figures of the changes in the order load are, of course, arrived at by simply subtracting the orders from the output in each period and, despite the fact that the basis of collecting the two sets of figures differs slightly, there can be little doubt that the resulting trends give a fairly accurate picture of what has been happening in the construction world.

These trends are shown in the table below. As will be seen, the total order load for new work fell substantially in 1957 and even more sharply in 1958 when the

are now moving ahead. An analysis of the recent White Paper on Public Investment in Great Britain indicates that in the coming financial year the expenditure on public works (excluding local authority housing) will rise to £745 million compared with the current £705 million.

Housing, of course, is on the crest of a wave. The order load fell slightly in 1957 and remained constant in 1958. But in 1959 and in the first nine months of 1960 it has risen by exactly £200 million and accounts for practically all the rise in the total order load over that period.

These various trends are highly significant. There has perhaps in Government circles been a tendency for a certain degree of complacency with regard to the regulation of construction activity based on the fact that output has remained reasonably consistent. It is, however, quite clear that, notwithstanding a consistent flow of output, there have been quite sudden fluctuations both in the total order load and in the order load for different classes of work.

The trends also throw some light on the

### ORDER LOAD

	1957	1958	1959	1960*
Housing (including Local Authority Housing)...	—£23m.	nil	+£122m.	+£78m.
Public Works (excluding Local Authority Housing)...	+£21m.	—£35m.	—£21m.	+£43m.
Private Industrial ...	—£60m.	—£83m.	—£41m.	+£8m.
Private Commercial, etc. ...	+£14m.	—£12m.	+£8m.	+£24m.
Total ...	—£48m.	—£130m.	+£68m.	+£153m.

\*First nine months only

7 per cent, bank rate and the investment restrictions took their effect. The greatest fall occurred in private industrial work where in the three years 1957-59 the order load fell by £184 million—the equivalent of the total output of industrial work in 1958. Output of industrial work has, in fact, been reasonably well maintained but only at the expense of work in the pipeline. There was, of course, in 1957 a great deal of work in hand following the boom in industrial construction which began after the licensing control was ended in November, 1954.

Private commercial and miscellaneous building, which includes offices and shops, show the most consistent pattern of all the various sectors of work. New orders have very nearly matched the output in each of the last four years.

#### Public Works

Public works suffered a setback in both 1958 and 1959 but, under the impetus of the road programme and the moderate expansion of other public services, such as water supply and sewerage schemes, they

almost paradoxical current situation in the constructional industries where labour is decidedly tight but at the same time there exist vast untapped potentialities of plant and managerial capacity, particularly on the civil engineering side. The reason for this, fairly clearly, is that the stimulus applied to the constructional industries after the 1957 and 1958 restrictions was centred largely on housing, which demands a relatively high proportion of labour and a relatively low proportion of plant. On the civil engineering side, however, the opencast coal programme was drastically curtailed, freeing an enormous quantity of earthmoving plant and drivers.

It will be interesting to see whether in the future the Government will do anything to redress the balance. Certainly from the national point of view there might seem some merit in giving greater emphasis to, for example, the motorway programme, which would utilise some of the plant capacity now standing idle and would produce a decidedly higher productivity from the labour transferred to the work.

## WATER SYSTEM FOR OLDBURY NUCLEAR STATION

### Parkinson's £2m. Contract

THE tender of Sir Lindsay Parkinson and Co., Ltd., amounting to about £2,200,000, has been accepted by the Central Electricity Generating Board for the circulating water system river works at Oldbury nuclear power station site, Gloucestershire. The contract includes the construction of a reservoir on the river foreshore and site preparation for the station.

The main contract is expected to be placed within the next few months.

Covering about 180 acres, the site lies on the south eastern bank of the Severn Estuary. The reservoir will cover 350 acres and will be created in the rock shelf

offshore, impounding water at high tide. From it, the large quantities of water needed for cooling the condensers of the steam turbines can be drawn during the low tide periods. This unusual arrangement will reduce the costs that would normally be incurred in obtaining cooling water from an estuary with as wide a tide range as the Severn.

Spoil from the construction of the reservoir will be used to fill the site area level with the top of the river bank and thus provide a safeguard against flooding.

Oldbury is the seventh nuclear power station for which the Generating Board has received consent. It is expected to commence operations in 1966.

## NEW YEAR HONOURS

NEW Year Honours have been conferred on a number of persons connected with the construction industries, to whom *The Contract Journal* offers sincere congratulations. Included in the list are the following:

#### Baron

Sir Alexander Fleck, chairman, Advisory Council on Research and Development, Ministry of Power, and of the Nuclear Safety Advisory Committee.

#### Baronets

Sir James Bowman, chairman, National Coal Board.

#### Knights Bachelor

G. E. Beharrell, chairman, Dunlop Rubber Co., Ltd.; C. Dannatt, vice-chairman, Associated Electrical Industries, Ltd.; W. O. Hart, clerk, London County Council.

#### C.B.

C. D. Campbell, under secretary, Board of Trade.

#### C.M.G.

J. G. Robertson, assistant secretary, Ministry of Labour.

#### G.B.E.

Sir Ellis Hunter, chairman and managing director, Dorman Long and Co., Ltd.

#### C.B.E.

J. Binns, deputy chairman, Public Works Loan Board; Prof. R. Browning, chairman, East Kilbride Development Corporation; L. Childs, chairman, Gt. Ouse River Board; G. A. Jellicoe, landscape architect; A. G. Jury, chairman, architect and director of planning, City of Glasgow; J. R. Pheazey, vice-chairman and int. general manager, Standard Telephones and Cables, Ltd.; A. R. Plowman, director of contracts, Ministry of Works; A. A. Rubbra, technical director, Rolls-Royce, Ltd.; J. B. Scott, sales director, Crompton Parkinson, Ltd.; C. Thacker, managing director, Ford Motor Co., Ltd.; H. Woods, H. M. deputy chief inspector of factories, Ministry of Labour.

#### O.B.E.

S. F. Chambers, assistant director of contracts, War Office; N. S. Farrow, managing director, Howard Farrow, Ltd.; Lord Mottistone, architect, for service in the construction of the Chapel of the Order of the British Empire in St. Paul's Cathedral; H. W. Sanders, superintending civil engineer, Grade I, Air Ministry; J. F. Smithie, engineer and surveyor, Bletchley U.D.C.

#### M.B.E.

J. C. Gale, director and sales manager, Petters, Ltd., Staines, Middx.; R. J. Garland, clerk, Hambledon R.D.C.; P. W. Haine, command architect, Southern Command, War Office; H. H. Powell, architect, Eastern Region British Railways; E. H. Ramage, director, Sir Robert McAlpine and Sons (South Wales), Ltd.; W. Smith, director of public cleansing, Wigan.

## NOVEMBER HOUSING FIGURES

The number of permanent houses completed in Great Britain during November was 25,372 (compared with 25,136 in November, 1959) of which local authorities were responsible for 9,933 and private builders for 14,845.

In the first eleven months of 1960, 270,440 houses were completed (compared with 250,238 in the same period of 1959).

The Sand and Gravel Association of Great Britain have published a booklet containing the Papers and discussion on the Production and Technology of Sand and Gravel Aggregates at the Third Short Course held at the Imperial College, London, last summer. Copies may be obtained from the Association's offices at 48 Park Street, London, W.1, price 10s. 6d., post free.

## ADVANCED METHODS EMPLOYED ON FORTH ROAD BRIDGE CONSTRUCTION

**T**HE Forth Road Bridge would be far ahead of any suspension bridge yet built, said Mr. H. Shirley Smith, agent for the main contractors, at a recent conference at South Queensferry.

No other bridge in the world had been designed to carry such a high load. It would be capable of taking vehicles weighing up to 180 tons. Mr. Smith said that there were about 200 of that weight in Britain, and yet the main towers of the Forth Bridge contained less steel and were far more slender than those erected for any comparable suspension bridge.

Overall, the bridge was a much more economical design than anything ever produced before. High tensile steels and special bolts were being used instead of rivets—a practice 20 years ahead of that used in America, Mr. Smith claimed.

He continued: "In the past 30 years, the Americans have built 30 of these bridges, whereas in Britain we have been held up because of lack of money. Without accepting the principle of toll charges, it has been a case of no bridges at all."

Tolls were charged on all the U.S. bridges and normally they were lower than had been charged by the previous ferries. For the Forth, he estimated that it would take 15 years to pay off the £16 million. Cars would be levied about 5s. and heavier commercial traffic more. The expected flow was 1,700,000 vehicles in the first year, rising to 2,700,000 a year later.

### Longest in Europe

The Forth Road bridge will have the greatest single span in Europe and the fourth longest in the world. It will extend 3,300ft., with two side spans of 1,340ft. each, the length between the abutments of the approach viaducts being 1½ miles. Some 30,000 tons of steelwork will be used on the bridge, together with 150,000 cu. yd. of concrete.

Preparations at site for the building of the superstructure started at the beginning

of this year. Designed by Mott, Hay and Anderson, and Freeman, Fox and Partners for the Forth Road Bridge Joint Board, the bridge will be the longest span built in Great Britain since the Forth Railway Bridge was opened.

The contract for the superstructure, amounting to about £9,000,000, was awarded to The A.C.D. Bridge, Co., Ltd., a partnership formed by Sir William Arrol and Co., Ltd., the Cleveland Bridge and Engineering Co., Ltd., and Dorman Long (Bridge and Engineering), Ltd.

Construction of the bridge superstructure falls naturally into three parts—erection of the steel towers, spinning of the cables, and construction of the deck. Part of this work, the spinning of the cables, is of a kind developed in America and never before carried out in this country.

The approximate tonnages of steelwork in the bridge are as follows: Towers—6,000 tons of structural steel; cables—8,000 tons of galvanised steel; suspended structure—16,000 tons of structural steel.

The wire will be drawn and all the structural steelwork fabricated in the works of one or other of the main contractors or their subsidiaries. The bulk of the steel in the towers and suspended structure is of high tensile quality to B.S.S. No. 968 and is shop welded. Site connections are made by means of high strength bolts in clearance holes which grip the plates by friction and are tightened using pneumatic wrenches. This is a quicker, cleaner, more economical process than riveting and more acceptable to modern labour.

The structural steelwork is all cleaned by grit blasting, metalized with a coat of zinc and protected by four coats of paint. A considerable portion of this work is being carried out at Drem in an existing hangar adopted for the purpose, where new machines—the prototypes of their kind—have been installed to do it. Drem is also used as a depot where bridge steelwork can be stored before delivery to site

for erection. Deliveries to Drem are made by road or rail, but all steelwork travels from Drem to the bridge site by road.

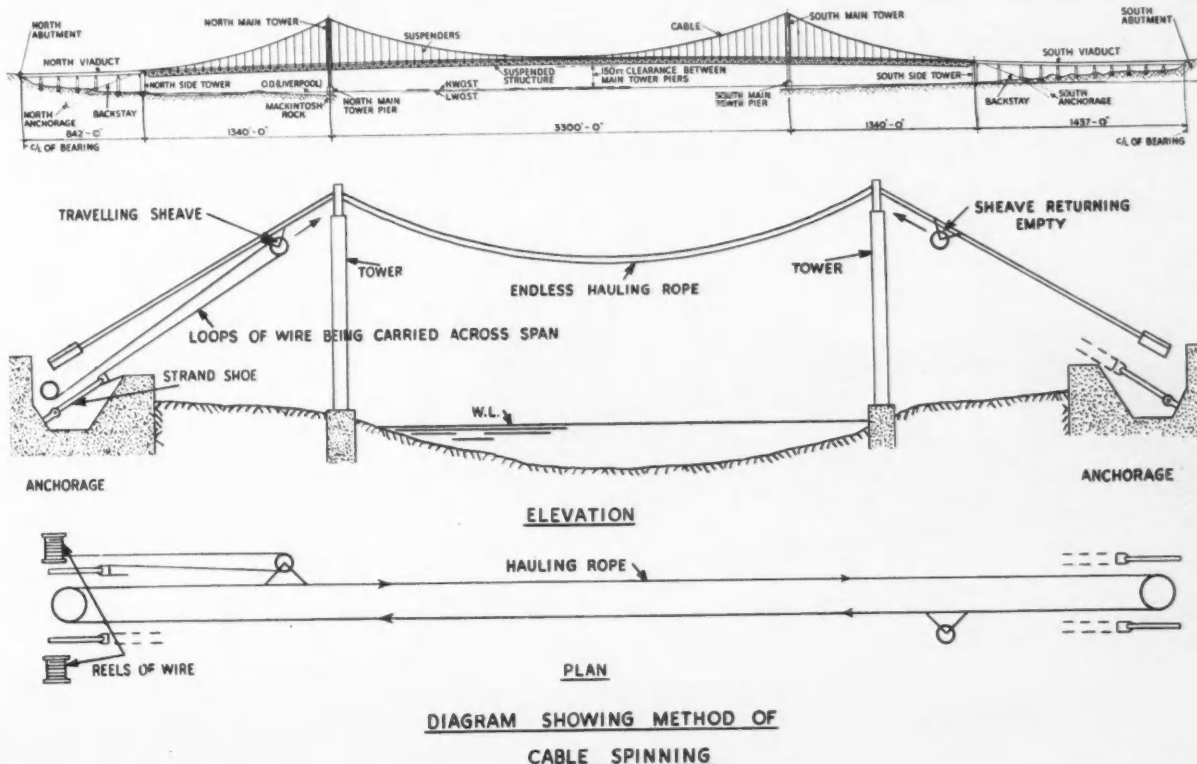
### The Towers

These each have two legs of cellular construction at 78ft. centres made up of 33 welded boxes, each about 47ft. 6in. long up to 12ft. wide and 5ft. deep, and having a maximum weight of a little over 30 tons. Three boxes placed side by side and interconnected by cover plates form the section of each tower leg, and 11 such sections built up one on top of the other, make up the full height of 505ft. In all, 132 box sections will be used, and nearly 2,000 tons of tower steelwork has already been erected.

The boxes are delivered to the base of the towers along a causeway from the shore by trailers, then off-loaded with a 32-ton electric derrick. After the first section of each tower is erected on its base and standing about 50ft. high, a climbing structure has to be assembled on it. This structure forms in effect a ring girder which surrounds the tower and is secured to it in such a manner that it can be released and jacked up hydraulically after each section of the tower is built.

Another 32-ton crane is assembled on the climbing structure. This is used to erect all the upper sections of the tower legs and the bracing between them. After each section has been assembled, the whole climbing structure with the crane on it, weighing about 240 tons, is raised hydraulically by means of links depending from crossheads placed temporarily on top of the steelwork so far erected. The climbing structure is then secured again in position near the top of the section to enable the crane to proceed with the erection of the next one.

The climbing structure forms a safe working platform, protected by hand-railing, and carries bolting up cages and gantries which give easy access to every part of the work. A microphone-loudspeaker system is installed on it for





communications during jacking operations. Two temporary hoists are provided up the sides of each tower throughout the work, to carry men and light materials from the base of the towers to the climbing structure.

To provide power for the cranes, lifts, lighting, etc., an 11,000-V supply has been provided to 500-kVA transformers and distribution boards on the north and south pier stagings. In addition compressed air and water supplies have been laid on. Water transport is provided across the river and radio-telephone sets will be installed on the river craft and at strategic points on the site to control the work.

#### Spinning the Cables

In a suspension bridge, the weight of the deck and traffic is all carried by the two main cables which span between the tops of the towers, dip down over the side towers and splay saddles and are secured at their ends in concrete anchorages built deep into the ground. These cables are each made of 11,618 parallel wires of galvanised high tensile steel and when completed they will be about 24in. diameter.

At the anchorages the wires are divided into 37 groups known as strands, each group being looped around a strand shoe which connects it to the anchorage.

Experience has shown that the most practical diameter of wire is about 0.19in. —with an ultimate strength of about 100 tons per sq. in. By drawing the wire thinner, the ultimate tensile strength could be increased, but a greater length of wire would be required. Also if the wires were made thicker their ultimate strength would be less and they would become too stiff to bend round the pulleys and reels.

In the Forth Road Bridge, some 30,000 miles of wire will be needed. It will be delivered by rail in coils of about 10cwt. to the store at the south end of the bridge. Here, the coils will be spliced together and wound onto 7ft. diameter reels, ready for spinning in place to form the cables.

Before the spinning can start, temporary footbridges or catwalks have to be erected across the river from the anchorages and over the tops of the towers, a few feet below the final level of the cables. Each footbridge will be 9ft. wide and will be supported by 10 wire ropes, 1in. thick—eight of which will carry the wire mesh floor of the catwalk, whilst two support the wire mesh parapets.

The footbridge ropes, which are about

6,000ft. long, will be erected by unreeling them from a barge towed across the river at low water and then lifting them up into place by means of light cranes on the tops of the towers. Seven cross-bridges will be provided to interconnect the catwalks, and storm systems of more wire ropes will be assembled beneath to keep them secure against winds of gale force.

Some 10ft. above each catwalk, an endless hauling rope or "tramway" will be built and this will carry two sheaves or pulleys, each with four grooves on it, so that it can carry four loops or bights of wire and haul them across the span. One of these sheaves will be at the north side and the other at the south side of the hauling rope.

All the spinning will be done from the south end of the bridge, where eight reels of wire will be set up over the anchorage. Electrically operated unreeling machines will unwind the wire from these reels, through the counterweight tower, which maintains a constant tension in the wire, and so to the spinning wheels.

Four wires will then be connected to a strand shoe in the anchorage and the loops of wire passed around the travelling sheave on the haulage rope. When the hauling rope is set in motion, synchronised with the unreeling machines, the four bights of wire will be carried over the tops of the towers to the far anchorage where they will be taken off the sheave by hand and placed around the strand shoe at that end. When the hauling rope is again set in motion, the sheave at the north end will return empty but another travelling sheave with four more loops of wire on it will be on its way from the south to the north side.

During the spinning process men will be posted at intervals of about 150ft. along the full length of the footbridge, and it will be their duty to adjust the wires as they are laid against a fixed guide wire—thus ensuring that they all have the same sag. Emergency stop buttons are provided for these men to allow them to stop the spinning wheel immediately in the event of an emergency.

The spinning wheel travels fast at 700ft. per minute—thus enabling four bights (eight wires) to be placed every 18 minutes. The work of spinning is usually carried out during two shifts in the daytime and the bunch of wires spun during the day is finally adjusted with hydraulic jacks at the anchorages during the night, when all the wires are at the same temperature.

When the whole cable has been erected

and the wires adjusted, they are compacted by squeezing them tightly together so as to form a compact circular section. This is done by a machine that encircles the cable, and is moved along it, squeezing the wires hard together at intervals of 3ft. by means of hydraulic jacks. After completion, each cable is permanently clamped in position in a machined cast steel saddle on the top of the towers.

Cable bands of cast steel are then bolted at each panel point along the cables and over these are placed long wire rope suspenders which hang down and carry the deck of the bridge.

The last operation on the cables—which cannot be done until most of the deck has been erected—is that of wrapping them around with binding wire throughout their length between the cable bands. This is performed by means of automatic wrapping machines which encircle the cable and travel along it, winding on the wrapping wire as they proceed.

#### Construction of the Deck

The deck steelwork or suspended structure of the bridge comprises two stiffening girders of Warren Truss design, 78ft. apart and 30ft. deep, which are connected to the ends of the vertical suspenders at each panel point, where latticed girders span between them. Extending for the full length of the bridge and braced together laterally, these stiffening trusses have the function of bracing the deck and preventing undue distortion either sideways or vertically in storms of wind or under heavy traffic.

In the main span, in order to reduce the weight, the roadways are designed as steel battle decks, i.e., of stiffened steel plates welded together at site, supported by steel stringers and provided with an asphalt wearing surface.

The bridge carries dual 24ft. roadways, divided by a marginal strip 10ft. wide, which are located between the stiffening trusses. The 9ft. wide cycle tracks and 6ft. walkways are built outside the trusses. In the side spans, where saving of weight is of no advantage, the roadways are of composite construction, consisting of reinforced concrete slabs which act in combination with the steel stringers to which they are bonded.

All the steelwork will be delivered by road to the base of the piers, lifted to deck level and erected by four 15-ton electric derricks which will travel outwards from the piers erecting the steelwork ahead of them. In order to prevent undue distortion of the cables, these cranes will erect the steelwork in two passes and the connections between the panels of the stiffening trusses will be made as soon as the temporary distortions during erection permit. Throughout the contract the safety of the steel erectors is of prime importance and to this end safety nets will be provided during the erection of the deck.

The north tower is due for completion by the end of February and the south tower in May, 1961. It is estimated that the maximum labour force on the bridge will be from 250 to 300 men during the cable spinning. This will be done in the latter part of 1961, and it is hoped to have the bridge opened to traffic by the middle of 1963.

#### Sub-contractors

In the following list the names of suppliers and sub-contractors are given, with the approximate value of their contracts:

Paint—Griffiths Bros. and Co., £20,000; bolts—A. P. Newall and Co., Ltd., £70,000; S. Marsden and Son, Ltd., £8,000; lifts—Keighley Lifts, Ltd., £14,000; hoists—A.C.E. Machinery, Ltd., £16,000; site buildings—H. Peel, Ltd., £8,000; Fleming Bros., Ltd., £3,000; Clyde Structural Iron Co., Ltd., £5,000; electrical work—J. Kirkpatrick and Sons, Ltd., £12,000; air compressors, tools, etc.—Consolidated Pneumatic Tool Co., Ltd., £30,000; derrick cranes—J. M. Henderson and Co., £100,000; Butters Bros., Ltd., £20,000;

(Concluded on page 64)



A new satellite town—the largest single private home project Australia has yet seen—is being built by Taylor Woodrow (Australia) Pty., Ltd., on a 300-acre site at "Lakelands," Dapto, near Greater Wollongong, N.S.W. The project includes 1,100 houses, a complete commercial centre of shops and office blocks. The photograph shows houses completed at Lakelands

**International Construction**

## U.S. PRESTRESSED CONCRETE GIRDER BRIDGE HAS 320FT. SPAN

**D**UE for completion by next summer, the Oneida Lake twin bridge, which is being constructed for the State of New York Department of Public Works as a major link in the Empire State Interstate Route 505, not only contains the longest prestressed concrete span in the western hemisphere, but also incorporates a number of unusual design and construction features.

Each of the three-span continuous twin bridges is made up of a central span, 320ft. long from centre to centre of the single set of piers, and two 75ft. long end spans. Designed as two separate parallel structures, each 45ft. wide and 56ft. from centre to centre, the bridge will carry three lanes of traffic in each direction.

### General Design

The two double cantilever structures are in the shape of a flat arch employing a total of 24 cantilever girders, which are 147ft. in length, 14ft. high, and project 72ft. beyond the piers at either end. A feature of the design is that these girders hang from diagonal tendons and rods, and have no direct support from beneath. Two types of cantilever girder have been used. Of the six at the ends of each structure, the two outer ones are rectangular in section with nine 9in. diameter Sonovoids in the webs, while the four inner girders are modified I-type.

Ten T-shaped girders, 231ft. long and up to 8ft. 6in. high, comprise the central span of the double structure. They are set between the cantilevers in an interlocking fashion, and are held in place by transverse stressing.

Originally, a tied steel arch was proposed, and tenders were invited twice for this project. New York State tendering procedure, however, invalidates tenders in excess of the engineer's estimate, which is announced beforehand. Because of this, no tenders were received in response to the two invitations.

Rather than raise the estimate, it was decided to change the design to a concrete structure, and as navigation requirements precluded in-situ concrete construction, a prestressed concrete bridge was planned.

Prestressing was carried out by the Swiss BBRV tensioning system, in which conduit-encased wires are attached by

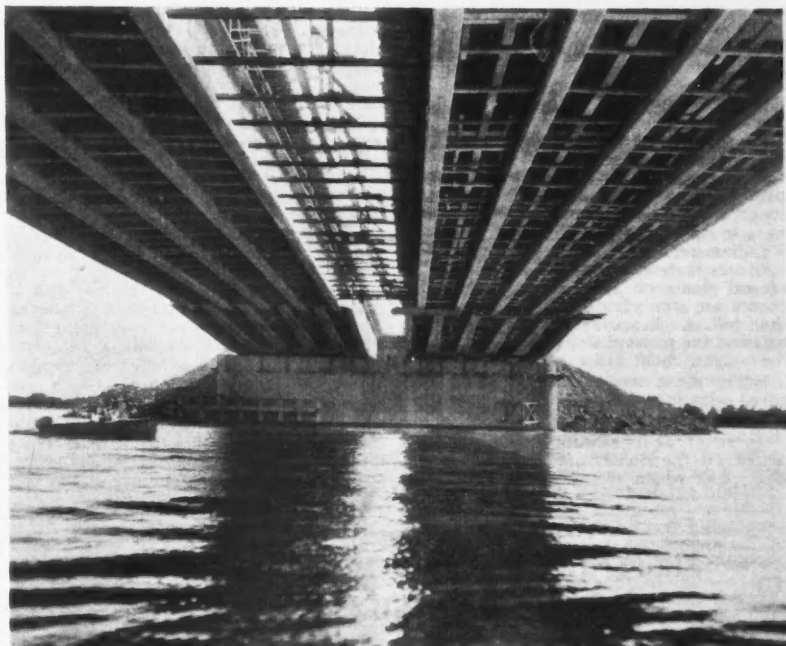
button heads to the anchorage. Tensioning jacks are screwed into the anchorage, and stressing is achieved by moving and shimming the anchorage.

### Cantilever Casting

Casting yards for the girders were set up on both banks of the New York Barge (Erie) Canal, which the bridge crosses, in

set for the exterior girders, two sets for the interior cantilever girders; and two sets for the suspended central span girders.

The actual casting took some seven months, prior to which the best part of a year had been spent by the contractor on planning and preparation for the concreting and handling operations. Concrete was delivered to the casting yards from a



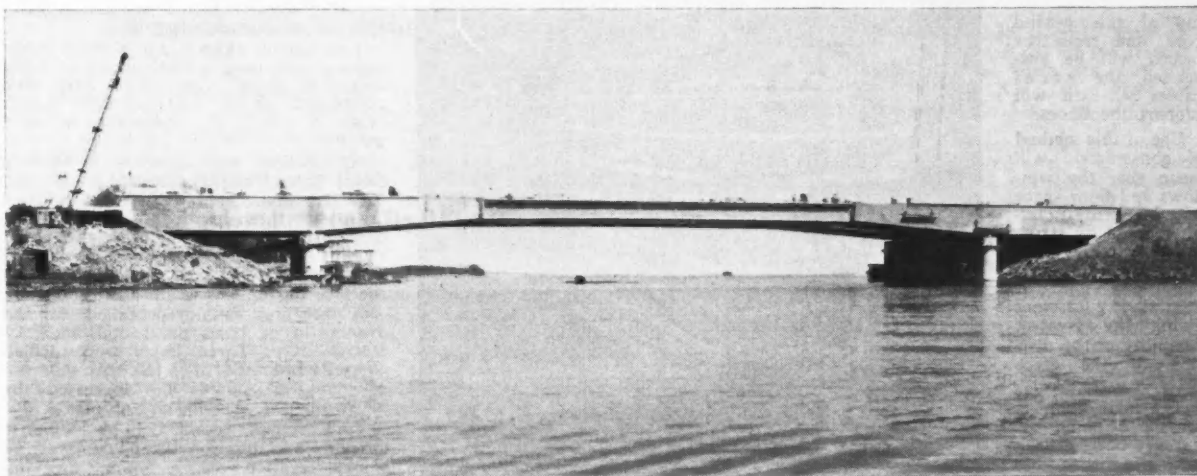
Underside of the twin structure, showing cantilever and central span girders

positions from which the cantilever girders, which weigh about 240 tons each, could be moved out over a temporary steel bridge between the abutment and the pier at each bank, using a system of steel channels and skid rollers.

Panel forms, which had been fabricated in 20ft. sections during the previous winter, were assembled into 40ft. lengths. Five sets of these forms were made; one

central batching plant by a type of ready-mixed concrete truck, and was placed from tower-supported hoppers to which were attached trunks feeding into 18in. by 12in. openings in the side of the panel forms. Vibrators were used from the other side of the form through two sets of openings left at 4ft. intervals.

Some five to six hours were taken to place 110 cu. yd. of concrete in a panel



General view of the bridge under construction

form. Work was carried out on both sides of the canal, producing one cantilever girder every 14½ days with each set of forms, it taking three days to position the forms and prepare for casting, four days for placing the tendons and reinforcing steel, one day for casting, four days for the concrete to reach the required strength, one day for tensioning, and 1½ days for moving the girder.

Concrete used had a 28-day strength of 5,000 p.s.i. and was placed at a slump of 3½ in. to 6 in. The use of a retarding densifier in the mix kept the concrete plastic until each 110 cu. yd. cantilever was cast, thus preventing cold joints and achieving workability. When it reached a strength of 4,000 p.s.i., the first stage of prestressing, involving taking up on eight tendons, was completed. There are 20 tendons in the exterior cantilevers and 28 in the interior ones.

#### Positioning Cantilevers

The problem of moving the cantilever girders into position was solved by the use of two low structural-steel carriages, or dollies, each of which travelled on four skid rollers along four tracks formed by 12 in. channels in 20 ft. long sections. These channel tracks were carried on a continuous mat of 4 in. by 12 in. transverse planking laid over 12 ft. wide pavement strips of 6 in. concrete, and the beams were moved forward by hydraulic rams of 5 in. diameter with a 5 ft. stroke. The girder carriages were designed for movement in several planes on 5½ in. diameter shafts to ensure an even distribution of weight on the rollers. Because of the cantilever balance, the forward dolly carried most of the weight, about 210 tons.

While being moved, the girders were guyed with four 1 in. steel cables to stiffen the limber middle portion.

On arrival at its location, the girder was jacked off the dollies and lowered on to sand jacks which rested on the pier and

abutment. These jacks, which were made of 24 in. pipe and had a 6 in. run, were lowered by the removal of sand through four previously capped 1½ in. openings.

With each set of six cantilevers in position, they were spaced with blocking and tied together with transverse rods through each end. Bearings were set between the girders and the bearing diaphragms were cast over them. Two other diaphragms were cast, one outshore and the other inshore from the pier, and the land end of the concrete counterweight was cast over the abutment. The second stage of prestressing, involving a further six tendons, was then carried out.

A standard design, with the bearings set beneath the girders, would have raised many problems, principally in the placing of the extremely heavy and bulky cantilevers, and in the task of keeping bearings and girders in their proper positions during girder placing, alignment and transverse stressing. Thus, in the design, it was decided to place the bearings between the cantilevers, and to position the suspended girders for the central span between the cantilevers rather than above them.

The cantilevers were arranged with rods extending diagonally upward from the sides at the bearing points, and diagonally downward from the sides in the areas of connection with the suspended span girders. The latter, in the area of their overlap with the cantilevers, had transverse rods extending diagonally upward from the sides. This arrangement allowed the bearings to be set at intermediate points and a diaphragm to be cast over each bearing. Through these diaphragms run the suspension tendons of the adjacent girders.

Tensioning of these tendons transfers the load of the girders through the bearing block to the bearings. With the suspended span or drop-in girders hung from the other end of the cantilevers by means of similar diaphragms, transverse stressing tendons extending across the

structure at each diaphragm give the necessary compressive force to hold the girders together.

#### Drop-in Girders Placing

Once the cantilevers had been positioned, all the twelve tendons in each drop-in girder were stressed and grouted in one phase, and the 222-ton units were moved from the casting bed to a 40 ft. by 200 ft. barge which carried them to mid-stream. Each girder was positioned by the barge between the cantilevers and raised with the aid of two sets of yokes, designed by the contractor, which were connected to frames set across the cantilevers. One set of yokes was for raising and the other for holding. The girder was raised by two 200-ton centre-hole hydraulic jacks, working on the shafts of the lifting yokes, a locknut on the holding yoke being tightened at the end of each 12 in. run, and the jacks reset.

A feature of the loading of the girders on to the barge at the casting beds was the elimination of any risk of stress on the girders during the operation. This was accomplished by the casting of a concrete slab on the bed of the lake adjacent to the loading area, the barge then being ballasted with water until it rested on the slab. After loading the stabilised barge was relieved of its water ballast until it refloated.

With all drop-in girders in position, they were braced and diagonally tied, and the sand was removed from the jacks until the weight of the beams was transferred to the bearings. Longitudinal stressing of the cantilevers was then completed, and the remaining portion of the counterweight cast and stressed.

Space between the girder slabs was filled with in-situ concrete, and a bituminous concrete pavement provides a levelling and wearing course.

Work still to be carried out includes the placing and compacting of the 14 ft. high approach fills to the top of the cantilevers, and the paving of the bridge deck. This is expected to be completed by the summer.

#### Consultants and Contractors

The bridge was designed by the New York firm of consulting engineers, Summer, Munniger and Molke, for the State of New York Public Works Department, whose chief engineer is Henry Ten Hagen. The deputy chief engineer, bridges, is C. F. Blanchard. Terry Contracting, Inc., Long Island City, are the main contractors.

## SUSPENDED FLOORS IN NEW ANTWERP OFFICE BUILDING

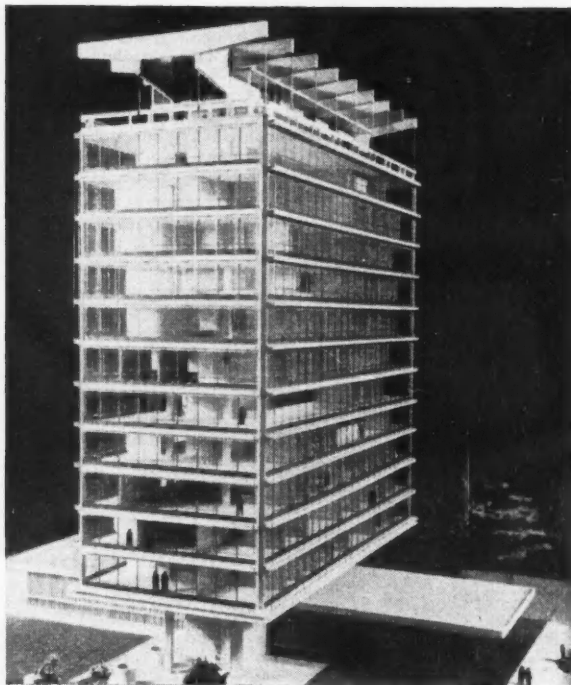
**A**N unusual building is to be erected in Antwerp as the head offices of BP Belgium. Rising to about 170 ft., it will have 12 main floors, which will hang on steel cables.

The main support of the building will be provided by a concrete central core formed by two lift shafts. Concrete beams will be cantilevered out from the top of this central core, and from the beams will be suspended the steel cables which will support the floors.

Use of this method of construction will mean that the windows and floor space will be entirely uninterrupted by structural supports, thus admitting the maximum amount of natural light, and giving the greatest flexibility in the division of the office space.

The main contract for the building has not yet been placed, but site work has commenced and erection is expected to

be completed in 1962. The architects are the Belgian firm of Stynen, De Meyer and Reusens.



Model of the new BP building

## PORTUGUESE ROCK TUNNELLING RECORD

Under the direction of Engo, Armando Serra, Messrs. MAGOP have established a new Portuguese record for rock tunnelling in the Cavado Rabagao tunnel of the Alto Rabagao Hydro-Electric scheme (Hydro-Elctrica de Cavado) Portugal.

This tunnel, which is one of many in the scheme, will have a final length of 4,900 metres of which 2,100 metres have been completed. It is 4.01 x 3.96 metres (13 ft. x 13 ft.) of horse-shoe in hard granite.

All drilling was done with Holman Silver Three Handrills mounted on Holman 52 in. Airlegs. Three worked from invert level with three more on a rail mounted portable staging to deal with the upper section. Air pressure at the face was 5.5—6 Kgs/Cm<sup>2</sup>. Ten men were employed at the face during each eight hour shift.

A vee cut employed called for an average of 56 holes per round, each 3.2 metres deep. Three holes were drilled every 24 hours but it is felt that this rate of progress could be increased by improving the mucking arrangements.

Time cycle per round: Drilling 2.5 hours; charging and blasting 0.5 hours; clearing smoke, etc. 0.5—0.75 hours; mucking 3.5 hours; average daily advance 8 metres (26 ft. 4 in.).



**International Construction**

## FIVE-STOREY HOTEL BUILT AT FREETOWN, SIERRA LEONE

**WORK** was recently completed on a new five-storey hotel—the Paramount—at Freetown, Sierra Leone. Containing 48 bedrooms, each air-conditioned and with its own private bathroom and toilet, the hotel is of international standard, and includes a restaurant, bar facilities and accommodation for business meetings and parties.

It was designed by James Cubitt and Partners, architects, 25 Gloucester Place, London, W.1, and was erected in 20 months by Taylor Woodrow (Sierra Leone), Ltd. The promoters are Freetown Hotel, Ltd., a private company financed by the Sierra Leone Government and the Colonial Development Corporation.

Full advantage has been taken of the slope on which the hotel lies, on the site

of the old British Council buildings. The depth of the hotel has been varied, one wing being four- and the other five-storey, and the landscaping—which is a feature of the project—incorporates a system of terraces, which also enhance the appearance. On one of the terraces, an open-air tiled dance floor has been laid, and sun terraces lie between this and the restaurants, which are on the lowest ground floor.

The bedrooms occupy the three upper floors, with the public rooms at entrance level and restaurants and kitchen rooms at the ground floor level of the five-storey section. Passenger lift service is provided between the entrance level and the bedroom floors.

The hotel, of reinforced concrete construction, incorporates a "sun umbrella" of aluminium sheeting in the roof and the group of bedroom windows facing

south are equipped with movable 9ft.-high sun breakers. Internally, further protection against climatic conditions includes, in addition to the air-conditioned bedrooms, the provision of centrifugal fans working from ventilation ducts in the bathrooms.

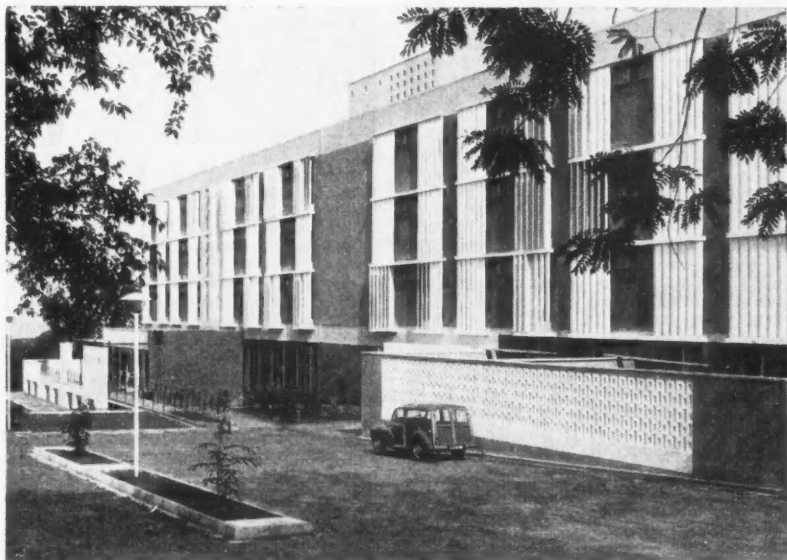
Maximum use has been made of natural ventilation in the four public rooms on the entrance floor level of the hotel. Glass louvered full-height windows with sun absorbant coloured glass above clear glass comprise the sun-shaded external walls. The two public restaurants are also air-conditioned and a ventilation system giving 20 air changes an hour has been designed for the cold rooms.

Throughout the four public rooms at entrance level there is one ceiling level, one floor level and a three-coloured pattern of Cerabati floor tiles below an acoustic board suspended ceiling with recessed light fittings. The entrance foyer is separated from the lounge by a marble barrier inset with four Terrazzo steps, while from the lounge a staircase leads down to the two public restaurants, which can be readily converted into one larger room. The restaurants have a one floor finish of Cerabati tiles and the ceiling has deep concrete beams supporting a heavily insulated roof. Between the beams are acoustic boards on battens with surface-mounted light fittings fixed to them.

The kitchen and stores are equipped with the latest electrical and stainless steel fittings and there is a complete electrically equipped laundry. Two service lifts go to the full height of the building.

Other features of the hotel include an open court planted with local trees leading from the entrance foyer, around which are shops, cloakrooms and other offices; and the provision of a 70,000-gallon fresh water storage tank, necessary in spite of a heavy May/September rainy season.

All materials except stone and sand were imported, necessitating close liaison between contractors and architects to ensure all materials were on site when required. Slabs and columns only were used in the construction of the bedroom floors. Plumbing services in the bathrooms were carried through ducts adjacent to the reinforced concrete columns, to which there is access through the columns.



View of the hotel showing the movable sun breakers in front of bedroom windows

### AMERICAN HOSPITAL STUDY TOUR REPORT

#### Comparisons with British Building Methods

**T**HE American technique of organising a Capital Works project when erecting a hospital, with the engagement of a hospital consultant, is worthy of serious consideration. This is stated in a report recently made to the East Anglian Regional Hospital Board by their architect, Mr. Guy Aldis, following a study tour of American hospitals by a Ministry of Health party, of which he was a member.

Whereas in England, says the report, the broad building sequence is structure, internal partitions, engineering installation and then finishes, the American order of operation is structure, engineering installation, internal partitions and then finishes. Installing the engineering services before the internal partitions gives the engineers complete freedom on each floor for fixing long runs in straight lines and manoeuvring 20ft. lengths of pipes unhampered.

The effect of this is that hospitals (and other buildings) are constructed more rapidly than in this country, and average building times are as follows: Hospitals up to 100 beds—18 months (and not less); 200 beds—21 months; 300 beds—24 months; and 400 beds and over—24 months plus.

It was generally felt that no hospital building over 300 beds, regardless of the maximum size, should require very much more than a month or two over two years.

Other conclusions arrived at in the report include the author's impressions that America did not appear to be troubled with cross-infection, perhaps due to air conditioning; and internal wall and floor finishes were not very impressive and left aspects to be desired as regarded dust elimination and ease of cleaning.

As regards general overall and departmental architectural planning, Mr. Aldis is of the opinion that there is little to be learnt from the Americans in this field.

### JAPAN'S LARGEST ASPHALT PLANT

A fully automatic asphalt plant to provide surfacing material for the Nagoya-Kobe Expressway in Japan has been sold to Nippon Doro K.K., of Tokyo, by Frederick Parker, Ltd., of Leicester, England.

It is the first plant of this type sold to Japan by Parkers, and when it is delivered in February, will be the largest and most modern of its kind in the country.

### SOIL STABILISATION IN NIGERIA

A £250,000 sub-contract for stabilising the base of a road in Nigeria has been awarded to The Cementation Co. Sixty-five miles of the road, which will run from Shagamu to Benin City in the Western Region, are to be treated.

Work on the sub-contract will begin next March. It will take about three years to complete, with work actually in progress during approximately four months of each year. Specialist "single pass" equipment will be shipped from the United Kingdom.

## RISE IN BUILDING COSTS PREDICTED

### Eastern Federation President on Wage Agreement

A RISE in building prices as a result of the recently agreed reduction in working hours and an increase in pay for building operatives which comes into effect next October is predicted by Mr. D. M. Chaston, F.I.O.B., of Hoddesdon, President of the Eastern Federation of Building Trades Employers, in his annual review which he will present to the Federation's annual general meeting at Cambridge, on January 11, 1961.

Mr. Chaston says that even allowing for the time lag which is proposed before the contemplated settlement becomes effective, an increase of 10 per cent. or more in wage rates appears to err on the side of generosity compared with recent negotiations and settlements in other major industries.

The desire of the employers to increase the status of the building worker and the recognition of the understandable request for more leisure, may possibly have been construed by the unions as a sign of weakness to be exploited as fully as possible, irrespective of where the money was to come from, a possible resultant reduction in the demand for building work, and the effect on the economy generally. To the smaller builder shorter hours and higher pay all too often mean higher building costs and fewer customers, with more leisure in which operatives can work for householders. Mr. Chaston goes on to say that while the average weekly hours in the industry remain well above the much sought after 42, a settlement along these lines can only mean a substantial increase in the weekly pay packet. A period of stability in building costs may well be now a thing of the past, although long advance notice of a major wages increase is a considerable advantage in this era of firm price tendering. Judging by the production index and past experience, there is no hope of fully absorbing these new costs and a rise in building prices is inevitable.

#### Prospects for 1961

On the economic prospects facing the industry for 1961, Mr. Chaston says "We should not overlook the fact that economic expansion in Britain has stopped, for the time being at least." Output which rose in the first quarter of 1960 has not really been improved upon in the second and third quarters. At the same time wages rates have increased steadily and prices have tended to rise a little and will continue to do so. Although industrial investment is at present running at a high level, a cautious estimate for 1961 is indicated. Industrial investment springs from industrial confidence which may be impaired if the present balance of payments position remains weak and the recession in the U.S.A. persists and continues to influence the economic thinking of the western world.

#### Building Land

So far as private enterprise housebuilding is concerned the review says that 1960 has been a boom year for house builders despite the reducing amount of suitable building land in many areas. Planning authorities have not shown the urgency implicit in the Minister's directive on higher densi-

ties, accelerated release of land, infilling, and building in the vicinity of green belts. It would be a considerable help to house-builder members of the Federation if planning authorities were more positive in their administration and more willing to assist builders genuinely seeking information on land scheduled for residential development. Much has been said before about land speculation, but the only lasting solution will come from the best possible use of a reasonable allocation of building land for residential purposes.

#### Tendering Procedure

Mr. Chaston on the section of the review on contract matters says "While we have established a sound basis for tendering and satisfactory forms of contract for work being carried out, we are less happy about tendering procedure. The Code of Procedure for Selective Tendering, for example, is largely unknown to many architects and carefully observed by only a few. There is a great amount of work awaiting our National Joint Consultative Committee in the field of contract procedure, but this will only be of real value if the agreed recommendations and principles are widely publicised and fully and faithfully observed by all members of the three constituent bodies and, indeed, by Government departments and local authorities."

It is also imperative that there should be a much closer adherence by building owners and architects to the conditions laid down by the National Federation in 1957 as essential for a return to this pre-war practice. To a large extent the remedy lies in the hands of members who must insist on the essential conditions being fulfilled before they proceed on a firm price basis. In all this we must remember, in case the public should remind us, that over the years firm price tendering has been the rule rather than the exception and that if we wish to be treated as contractors we must act as such.

On the matter of apprenticeship the review strikes an optimistic note and records that the figure for intake of apprentices for 1960 was 10 per cent. up on the previous year.

#### BATTERY WHARF FIRE

Austins of East Ham, Ltd., announce that a fire occurred on their wharf at Battery Wharf, Barking, Essex, on December 29; it was mostly confined to timber stocks and the factory on that site was not seriously damaged. It is hoped to have this working again within about a week, so that delivery of finished goods will only be slightly affected.

(Concluded from page 60)

mobile cranes—N.C.K. Rapier Sales, Ltd., £12,000; ropes—Bruntons (Musselburgh), Ltd., £200,000; zinc wire—Chas. Clifford, Ltd., £30,000; metallising plant and equipment—Metallisation, Ltd., £10,000; grit blasting plant and equipment—Spencer Halstead, Ltd., £30,000; road transport—Gavin Wilkie, Ltd., £70,000; cable splices, etc.—Cable Covers, Ltd., £4,000; trailers—Taskers of Andover (1932), Ltd., £10,000; red lead paint—Federated Paints, Ltd., £2,000; temporary civil work—Gibson and Milne, Ltd., £6,000; oxygen and propane—British Oxygen Cranes, Ltd., £2,000; welding equipment—Murex Welding Processes, Ltd., £3,000; motor vehicles—Rossleigh, Ltd., £8,000; wire—Dorman Long (Steel), Ltd., £560,000; oils, etc.—Shell Mex and B.P., Ltd., £20,000; mobile crane—R. H. Neal, Ltd., £8,000; site buildings—Chas. Brand, Ltd.

## Late Construction News

**NOTTINGHAM UNIVERSITY CONTRACT.**—A contract valued at £786,000 for constructing the new physics and mathematics building at the University of Nottingham has been awarded to Richard Costain, Ltd. The contract covers the erection of a three-storey teaching building, a three-storey entrance link with a basement beneath, a two-storey bridge link, a three-storey research building and a single-storey research and workshop building. Basil Spence and Partners, 1 Canonbury Place, London, N.1, are the architects. Consultants include: Ove Arup and Partners, structural engineers, 13 Fitzroy Street, London, W.1; Phillips, Son and Partners, mechanical engineers, 26 Annesley Grove, Nottingham; and Messrs. Gleds, quantity surveyors, 106 Regent Street, London, W.1.

**15-STOREY FLATS.**—Chelmsford B.C. have accepted the tender of Thomas Bates and Sons, Ltd., Alexandra Road, Shenfield, at £146,480, for building a 15-storey block of flats at Melbourne Estate.

**RIVER CULVERTING.**—Leonard Fairclough, Ltd., Adlington, have been awarded a £40,000 contract for the first stage of a £250,000 scheme for culverting part of the River Blakewater. This culverting is a preliminary to the opening up of a new market site for Blackburn B.C.

**HARLOW SECONDARY SCHOOL.**—Work will begin later this month on the erection of Harlow Burnt Mill Secondary School, for Essex C.C. The contract, worth £331,944, has been placed with Y. J. Lovell (Bucks.), Ltd., Marsham Lane, Gerrards Cross, Bucks. Plans are by the county architect, H. Conolly.

**LEWISHAM HOUSING.**—Subject to Ministry approval, Lewisham B.C. are to accept the tender of Croudace, Ltd., 97 Godstone Road, Caterham, Surrey, at £350,074, for the erection of 76 maisonnettes, 37 flats, 24 houses and 25 garages at Sydenham Park Road, Sydenham Park and Longfield Crescent.

**208 OLD PERSONS' DWELLINGS.**—Halifax B.C. have received Ministry approval to the acceptance of tenders from George Wimpey and Co., Ltd., for building 208 one-bedroom flats for aged persons, at a cost of £296,383.

**WEST HAM CLINIC.**—Work will begin next month on the erection of West Ham's new health clinic. The B.C. have placed the contract with H. C. Horswill, Ltd., 182 Green Street, London, E.7, at about £80,000. Plans have been prepared by the staff of the borough architect Thomas E. North, the design architect being J. D. Hume.

**ARMAGH SCHOOLS.**—A £73,447 tender for site and sub-structure works at Armagh's new intermediate and technical schools has been accepted by the County Education Committee. It was submitted by Collen Bros., Hanover Street, Portadown, and was the lowest of nine tenders. The committee have also placed an £84,000 contract with Messrs. O'Hare, Newry, for the erection of an intermediate school at Keady.

**£3M. SHEFFIELD HOUSING.**—Subject to Ministry approval, Sheffield City Council have been recommended to authorise their public works department to carry out the erection of 1,160 dwellings and ancillary buildings as stage 2 of part 2 of the Park Hill redevelopment scheme. The cost will be £3,123,937.

**ROTHERHAM OFFICE BLOCK.**—Steel, Peach and Tozer, Ltd., Rotherham, are to place a contract with George Longden and Son, Ltd., Sheffield, for building a new administrative block in connection with a £10m. electric arc furnace scheme. The contract is thought to be worth about £237,000.

**NOTTINGHAM HOUSES.**—The tender of J. Searson, Ltd., Station Road, Sutton-in-Ashfield, Notts., amounting to £330,000, has been accepted by Nottingham City Council for 150 houses, 10 bungalows, 54 flats and 35 garages at Bestwood Park Estate.

#### THANK YOU!

The Editor thanks most sincerely the many readers who sent seasonal greetings and also the associations and companies who kindly sent diaries and calendars for 1961.

# THE 275/400-kV WEST THURROCK CROSSING OF THE THAMES

From a Correspondent

**D**ESIGNED as a major stage in the development of the 275-kV Supergrid in Southern England, considerable interest attaches to the 275/400-kV West Thurrock Crossing of the River Thames. This crossing is an essential part of the continuance of the supergrid into the south-east and will also form at the same time a major step in the closure of the 275-kV "ring" around London.

The new line, of which the crossing forms a part, starts at the C.E.G.B.'s 275-kV station at West Thurrock on the north bank of the Thames and is carried over to Northfleet by the special conductors of the crossing before continuing as a standard 275-kV line via Canterbury to Lydd with connections to the cross-channel cable link and to the nuclear power station now under construction at Dungeness.

Its design and erection has taken account of the Board's recently announced policy of uprating the supergrid from 275-kV to 400-kV, a policy which has been adopted in order to increase transmission capacities and to minimise the number of grid lines required, thus reducing interference with amenities to a minimum.

In essence, the crossing consists of two 615ft. towers of high tensile steel which support the conductors at the necessary height to gain the stipulated river clearance, and two anchor towers which take the strain of the crossing conductors.

## Extensive Studies

The selection of a site for the crossing and the consideration of the most suitable design for both towers and conductors was the subject of extensive studies by the transmission line design engineers of the C.E.G.B.

In considering the design factors for the crossing, it was apparent at an early stage that the site between West Thurrock and Northfleet was the most suitable for this crossing. It was also obvious that, due to the 4,500ft. of the span and the

fact that a minimum clearance of 250ft. between the lowest point of the span and the mean high water was required by the P.L.A., special attention would have to be given to the conductor tower design.

The standard conductors which the C.E.G.B. employs for the 275-kV supergrid are twin 0.4in.<sup>2</sup> steel-cored aluminium conductors per phase. Whilst these would not provide sufficient strength for the 4,500ft. span of the crossing, the experience gained by the Board of this type of conductor led to the development of a 199 stranded, steel-cored conductor, using 91-120 tons/in.<sup>2</sup> grade steel wires as a core with 108 strands of aluminium arranged in three layers over the core.

This conductor matches in capacity the twin conductors of the incoming lines and has sufficient diameter (2.262in.) to accommodate the maximum operating pressure of 400-kV without corona losses arising. Its high mechanical strength necessary to obtain an economic sag, is shown by the calculated ultimate strength of 290,000lb., and the modulus of elasticity at  $14.25 \times 10^6$  lb./in.<sup>2</sup>. Its maximum working tension is 97,200lb.

In working out the design, account was taken of aerodynamic effects as might be expected with long spans of this nature in addition to the more routine meteorological aspects. The design radial thickness for ice loading is 0.5in. and the wind loading figure on 80 per cent. of wind span is 15lb./ft.<sup>2</sup>.

A central over-running earth wire of the same construction as the conductors will be employed on the crossing. This wire will give a shielding angle of 45 degrees and by using a conductor for this duty, uniform mechanical characteristics and economic life are obtained together with a measure of convenient interchangeability.

## Square in Plan

The two crossing towers are square in plan, the height being 615ft. and the base being 100ft. square. The overall length of the top cross-arm is 74ft. Each tower consists of 21 main leg sections, these

being between 25ft. and 31ft. in length, making 11 panels. The first lower five panels take the form of modified K bracings, these being followed by a series of open diamond and scissor braced panels.



Close-up of tower steelwork

The graceful shape of the tower is governed by a change of leg slope at every second panel, i.e., every 125ft.; it was both convenient and desirable to use such an interval to enable aircraft obstruction lights to be sited at the main horizontal bracing members at these levels, thus achieving support for the access catwalks to the lights.

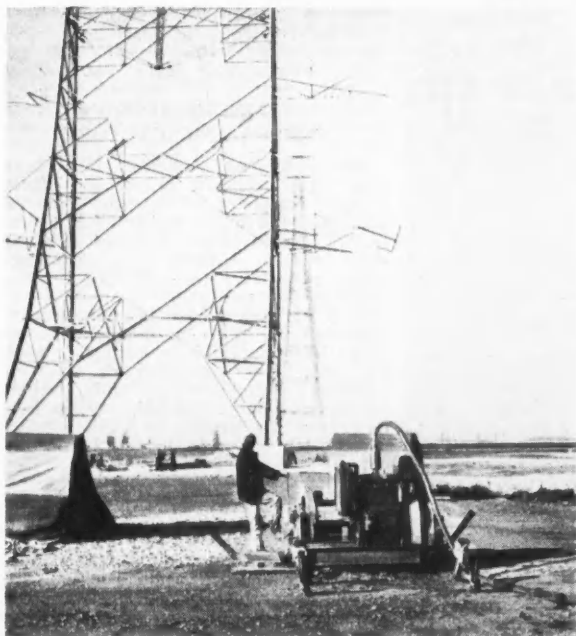
## Maintenance Platform

At the top of the third pair of panels (375ft.) is located the main "half-way house" maintenance platform which will carry an overhead track and trolley plus winching equipment for lifting the assembling spare insulators. Further maintenance lifting gear is located at the top of the tower, this being supported by a special cross-arm located above the top-most conductor cross-arms at 31ft. 3in. intervals.

A particular feature of the towers is the 15ft. sq. central column which is carried up as far as the 375ft. maintenance platform. This column was designed to assist in the erection of the six lower panels of the tower by providing a base for the derrick and also to give a structure around which a central stairway could be built of standardised units, with radiating catwalks out to the aircraft lighting panels. They also form central lifting wells for maintenance material and equipment.

The steelwork comprises standard, galvanised, high tensile steel rolled sections conforming to B.S. 548. It has been fully site assembled and of particular note has been the smoothness by which site assembly has been marked, resulting from extremely fine tolerances of manufacture.

The anchor towers are also fabricated from high tensile steel, these towers each consisting of four panels of 30ft., 41ft.,



Raising anchor tower steelwork



41ft. and 33ft. high, each panel forming an open diamond structure. The function of these towers is that of a frame to which the crossing conductors are secured. They are, however, provided with three pairs of auxiliary cross-arms which support the "jumpers" or connections between the incoming lines and the crossing conductors.

Mounted at the end of the suspension tower cross-arms are universal bearings from which the insulator assemblies are hung. These insulator assemblies will have jacking equipment to allow the insulator string to be removed for servicing, and inspection of the universal bearings will also be possible without disturbing the insulators.

The suspension assemblies on the crossing towers consist of six insulator strings in parallel, and the tension sets have eight parallel strings, all the insulator assemblies incorporating lever balancing between strings and being designed for equal load sharing in the event of one string failing. Each string consists of 20 porcelain units in both the suspension and tension sets, two extra units being fitted to each tension set to improve the wet flashover values due to the bunching of eight strings in one assembly.

The diameters and centres of the units are 14in. by 6½in. in the suspension sets and 12½in. by 7½in. for the tension sets, the overall length being 275½in. and 294½in., respectively. Ball and socket insulator couplings are used throughout. The ultimate load figure for the suspension sets is 180,000lb., whilst that for the tension sets is 240,000lb.

#### Foundation Work

The foundation work for the towers was started on both sides of the river early in 1959, tower construction commencing in August, 1959. The foundations for the crossing towers consisted of 30 reinforced concrete piles, each 17in. square, at each of the four legs of the tower, and at the anchor towers 100 piles are provided at the rear to resist overturning forces. The piles were taken 40ft. deep on the north side and 45ft. deep on the south bank. The survey work in connection with setting out the towers was particularly intricate, this being borne out by the fact that all four towers are aligned to within ¼in. over a total length of 7,700ft. The crossing span is 4,500ft. and each anchor span is 1,600ft. The spans were checked with a geodetic theodolite, a tellurometer being finally used to check span distance over the 4,500ft. to within 3in. The exceptional accuracy of alignment was obtained by mounting neon tubes vertically on masts at each site and aligning these by night-time theodolite observation under v.h.f. radio control.

The building of each crossing tower began with the erection of the first 125ft. of the central column and upon this an 80ft. derrick was mounted in a lifting rig for the erection of the first 60ft. panel of the tower. When this panel was complete the central column was erected another 60ft., the luffing derrick was also lifted up 60ft., and erection was continued on the second panel of the main structure. Above 350ft., this derrick was later used as a floating rig for the main construction. The structure uses G.K.N. high tensile bolts run with ratchet spanners.

The winching duties for raising all men and components at the crossing towers is carried out by a modified Sykes No. 8 winch powered by a Lister F.R.4 engine. A further Sykes No. 7 winch powered by a Ruston 3YC engine is used as an auxiliary on each tower. The main Sykes winch is reeved on a 3:1 reduction tackle, the maximum lift to date being 3½ tons. The maximum bond length is 4,100ft., the drum speed being 120ft.-150ft. per minute, giving a lifting speed of 40ft.-50ft. per minute. The bond used is ¼in. diameter steel wire rope in 10 laps.

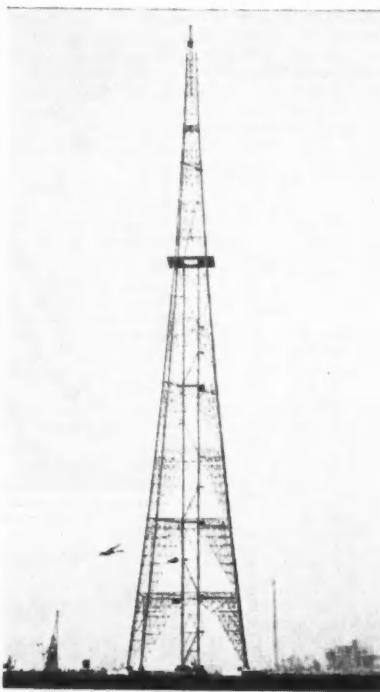
At the anchor towers the main winch is a Sykes No. 7 winch, the auxiliary being a No. 6 size. The main winch here is reeved as at the crossing tower and the

maximum lift of 3 tons will be for the top main truss. A 3,000ft. bond length was provided with this winch to enable it to be used for lifting the insulators of the main tower.

Of particular note are the safety brakes used with the winches to guard against any mishap should the winch operator be suddenly incapacitated as for example in the event of an electrical discharge down the tower and along the bond. The brakes employed are so arranged that they are normally in the applied position and are released by feet pressure. This control is quite light in order that the operator shall not become fatigued during the long hoists necessary.

#### Intricate Section

The most intricate section of the construction of the crossing towers was the erection of the top maintenance cross-arm, which required an additional derrick at



615ft. Thames crossing tower

the 600ft. level. The cross-arm was erected, section by section, 615ft. above the ground, early sections being stayed. When this unit was completed, the six lower insulator cross-arms were raised into position. These units each weighed 2½ tons and were pre-assembled on the ground.

The running of the conductors also presents certain facets of interest. The procedure to be adopted will consist of laying a track and haulage rope in the river, with each end being passed over the tops of the crossing towers on wheeled paddles. At times agreed with the P.L.A., the river will be closed and these ropes will be hoisted out of the water and tensioned by winches and tackle at the rear of the anchor towers. The haulage rope and track rope will then be "stitched" together by means of a set of trolleys which run on the fixed track rope and are pulled by the moving haulage rope. When the system is completely stitched and ready, it will carry the conductors by means of a further set of suspension trolleys which will be hauled over the crossing, the suspension trolleys being fed on at one end and the stitching trolleys being removed at the other end. The conductor drum will be mounted on the north bank and the haulage winch on the south bank. (All operations will be directed by v.h.f. radio control and there will be as many as six radio sets maintaining contact

between the teams on the ground, at the tower top and on the opposite side of the river.)

One of the conditions of the contract is that no conductor shall touch water or land at any stage, this being necessary due to the need to prevent any possibility of damage to the cables and thus giving rise, amongst other things, to corona losses. As each conductor is received across at the far anchor tower, it will be tensioned at both ends and released from the suspension trolleys. This is possible as the sag of the track rope system will be greater than the sag of the conductor in its service position. Tension and suspension insulators will then be inserted at the anchor and crossing towers and the track rope and trolley prepared for the next conductor by reversing the haulage rope, re-attaching the stitching trolleys and recovering the suspension trolleys at the north bank anchor tower.

#### Contractors

The main contractors for the C.E.G.B. are British Insulated Callenders Construction Co., Ltd., the detail tower design being by Blaw Knox, Ltd. Steelwork for the suspension towers was fabricated by Horsley Bridge and Thomas Piggott, Ltd., whilst that for the anchor towers was fabricated by Painter Bros., Ltd.

The foundation design consultants were Sir Alexander Gibb and Partners, the foundations being emplaced by Holloway Bros., Ltd., and Mears Bros., Ltd. The conductors are being supplied by British Insulated Callenders Cables, Ltd., and the conductor erection equipment by John Barnsley and Co., Ltd. The anchor clamps, armour rods and vibration clampers are supplied by Alcan Industries, Ltd., the insulator assemblies being manufactured by Bullers, Ltd.

#### HOLLAND'S DIKES NEED RAISING

A commission on Holland's coastal defences has suggested in its final report that the country's dikes should be raised by more than a metre above the level reached by the water in the 1953 flood.

The commission, which has been sitting for seven years, reports that the entire system of dikes is inadequate to meet the more violent storm tides which can be expected in the future. It recommends, in addition to the general heightening and strengthening, the construction of a second line of defence in several danger areas.

Work is already in hand on one project suggested by the commission in an earlier interim report—the closing off of the sea estuaries in South Holland and Zeeland.

#### AVELING-BARFORD'S AUSTRALIAN FACTORY

Aveling-Barford Australia Pty., Ltd., have taken over new factory and offices recently completed at Revesby, some 16 miles from Sydney, N.S.W. Part-manufacture of road rollers, motor graders and stone crushers, hitherto undertaken elsewhere in Sydney, has now been concentrated in the new plant.

With provision for possible future expansion, the Revesby installation comprises two adjacent bays, each 60ft. wide by 210ft. long and carrying its own overhead electric crane, with factory offices built on to the side of one bay, throughout its length. An administrative office block is linked to the factory by covered walkways.

#### RISE IN DUNLOP EXPORTS

Dunlop exports for the first nine months of this year, at more than £14 million, are up 13 per cent. on the corresponding period in 1959. The major markets are in the Middle East and Africa, but 150 countries are on the current Dunlop export list.

## TOWN AND COUNTRY PLANNING SYSTEM UNDER ATTACK

### A New Bow Group Pamphlet

**B**IG changes in the present system of town and country planning are advocated in "Let Our Cities Live", a pamphlet published last week by the Conservative Political Centre on behalf of the Bow Group.

The principal theme of its authors is that "planning in Britain seems to have become a vain struggle against the growth of cities rather than an acceptance of them as providing most of the possibilities and promises of modern civilised life". They propose "that we shake off the image of the conurbation as a Victorian horror" and begin this process by putting right its three chief faults: slum and near-slum buildings, deplorable and worsening traffic conditions, and the shortage of public parks and playgrounds.

The pamphlet points out that central redevelopment at the speed which will be necessary for a city's survival will be very costly, and not to enlist the aid of private money would be silly. But under existing law only a body vested with compulsory purchase powers can be certain of getting together a large site for redevelopment.

#### Land Pooling System

The authors therefore propose a land pooling system—"although this is revolutionary to the concept of British property ownership, it is nothing new in some other countries"—under which a block of property physically and economically obsolete could be declared a "redevelopment block" upon application to the Courts by for example over half the owners involved.

"The block and all its interests", the authors explain, "would be valued by an independent valuer appointed by the Court and a company would be set up to take over ownership of the block. The shares in the company would be distributed to the former site owners in proportion to the value of their original interest in the whole. The company would elect a board to work out its redevelopment scheme in agreement with the local authority who would naturally be able to use the same Part III planning powers to control the redevelopment as in any normal rebuilding scheme."

The pamphlet also proposes that local housing and planning authorities should, with the approval of the Ministry of Housing and Local Government, have power to declare "improvement areas" where they consider run-down residential areas could be saved from becoming slum areas by a concerted effort to improve the property and the environment. Local authorities, say the authors, should be able to enforce certain standards of improvement and the existing improvement grant funds should be used to assist owners with up to half the cost.

The ultimate responsibility for eliminating the slums rests on the Government, says the pamphlet. Slum areas must be replanned and built up again. But because of the scarcity of land in this country, "it must be the first aim of town planning to make the very most of every acre". The authors, therefore, consider that it should be the objective of all rehousing schemes to fit as many dwellings as possible into the available space whilst keeping up standards, and the mention that very high densities of housing are being obtained in Scandinavia by developing new forms of terrace and courtyard houses and flats.

#### Traffic Problem

To deal with the traffic problem, the pamphlet advocates: the improvement of suburban and underground railways; a carefully planned system of fast urban roads; the segregation of pedestrian from

motor traffic wherever possible; and the restriction of street parking and the provision of off-street parking nicely geared to the capacity of the planned road system. To ease congestion by spreading the traffic load, the authors would also like to see the dispersal of the main centres of employment throughout the whole area of the conurbations, and an increase in the residential population of city centres.

#### Green Belt Policy

The pamphlet describes the present Green Belt policy as out of date. "With our cities continually growing, the Green Belt eventually becomes a Green Noose against which the pressure is so strong that either building is bound to be permitted within it, or else development will jump over it and continue beyond. In the latter case, and there are signs that this process has already begun, the function of Green Belts immediately becomes something absurd, that of a large green 'distance piece' between two sections of the same conurbation; the sense of community, so vital a part of city life, is lost, and the endless sprawl continues at one remove".

The authors suggest that each Green Belt must be vigorously reshaped to allow fingers of high density development to reach out into country parkland and permit wedges of green parkland to penetrate to the centre of the city. They point out that in Copenhagen a plan of this kind has been adopted successfully whereby the city has acquired an outspread hand shape with room to grow in each finger. They recognise that in many English cities it is too late to apply this conception to the whole, but say it can be applied to future development and opportunity taken whenever possible to extend it inwards as well as outwards. In addition, they say: "We do not want Green Belts; we want a Green Britain", and they recommend that all the rural land around and between our cities and towns should be regarded as "green" and protected from undesirable development.

#### New Cities

The pamphlet proposes, as the only way of solving the overspill problem with reasonable speed, the establishment under

Government auspices of two new cities, each planned for an ultimate population of at least 300-400,000. One would be in Lincolnshire, to relieve the population problems of Birmingham, Manchester and the North, and another in the West Country to relieve population pressure on the London Area. "By building new cities instead of new towns", it is stated, "people, politicians and planners would be made to think in terms of large urban areas with new emphasis, and undoubtedly much would be learnt about the problems of the old in the process of designing the new".

#### Present Structure Too Limited

The present planning structure of local government is severely criticised by the authors, on the grounds that "it is too limited to manage large-scale planning and yet too cumbersome for local problems". They make two proposals to remedy this: first, the abolition of the counties and county boroughs as the statutory local planning authorities and their replacement by 14 "Area Planning Councils"; secondly, the compulsory delegation by the Area Planning Councils of Part III powers—i.e., development control—to all local town councils having populations of 20,000 or more, and elsewhere to the county councils.

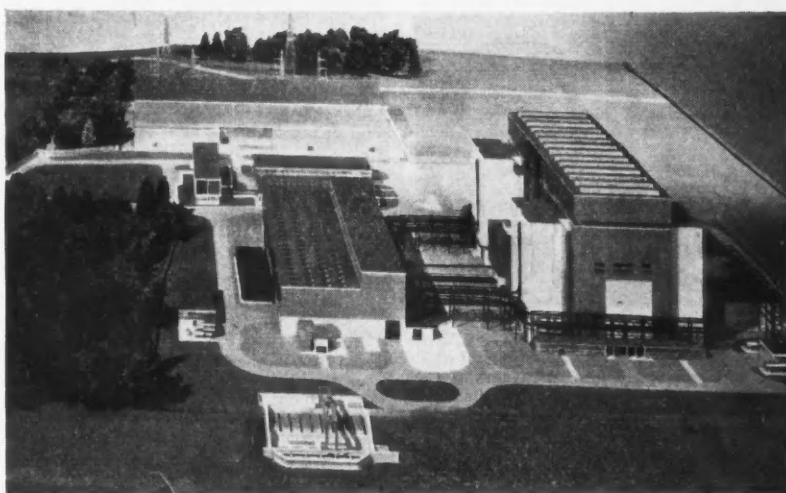
So far as central administration is concerned, the authors recommend a system whereby all proposals concerning and involving the use of land should be submitted to the Ministry of Housing and Local Government for examination, in the same way as departmental proposals are submitted to the Treasury for comment on their economic implications. They also suggest that the Ministry should again include the word "Planning" in its title.

"Let Our Cities Live" (price 2s. 6d.) is obtainable from the Conservative Political Centre, 32 Smith Square, London, S.W.1, and from the C.P.C. Bookshop, 6 Victoria Street, London, S.W.1.

### INFORMATION FOR THE BRITISH EXPORTER

A second edition of the coloured wall map, "Information for the British Exporter," has been prepared for the Board of Trade by the Central Office of Information.

The map, which is 40in. wide by 30in. deep, is again being distributed free to United Kingdom firms by the Regional Controllers of the Board of Trade. All inquiries regarding copies of the map should be addressed to Regional Controllers.



A model of the £55m. nuclear power station which the English Electric, Babcock and Wilcox, Taylor Woodrow Atomic Power Group are to construct at Sizewell in Suffolk for the Central Electricity Generating Board. The photograph shows the turbine hall on the left, the reactor building flanked by its boilers to the right and the indoor switchgear building in the background. In the foreground is the sea water pump house through which will pass the 25 million gallons per hour of sea water used to condense the steam.

## Men and Movements

**E.** BOYDELL AND CO., LTD., have announced the appointment of **Mr. B. N. Jolly** as managing director to succeed the founder of the company, **Mr. E. Boyde**, who will remain as chairman. Following the acquisition of the equity of the company some 12 months ago by Winget, Ltd., **Mr. R. Ducas**, chairman of Winget and **Mr. E. F. O. Gascoigne**, deputy chairman, are also joining the Boyde Board. **Mr. Jolly** has been with Boydells since the company's inception in 1931 and has been successively area representative, sales manager and, for the past 15 years, director and general manager.



B. N. JOLLY

The new president of the British Iron and Steel Federation is **Mr. Charles Wheeler**, who succeeds **Mr. R. F. Summers**. The president-elect during 1961 will be **Sir Julian Pote**.

The Council of the London Master Builders Association has appointed **Mr. D. W. Payn, T.D., F.C.C.S., Barrister-at-Law**, to be secretary of the Association in succession to **Mr. R. E. Stenning, M.A., F.I.Arb.**, who leaves on March 1. **Mr. Payn** took up his duties on January 1, as secretary-designate.

**Mr. L. J. Garibaldi** has been appointed manager, steam and gas turbines division of The English Electric Co., Ltd., at Rugby, in succession to **Mr. A. Friswell**, who has retired. **Mr. Garibaldi**, who has been contracts manager, steam turbine division, since 1955, will be responsible to the general manager, Rugby and Whetstone, for all commercial activities connected with turbines and for the co-ordination of policy in engineering, sales and contracts. **Mr. Friswell** joined English Electric in 1921.

Following the initiating of a contractors' tools division within the organisation of Hardun and Sons, Ltd., West Drayton, **Mr. T. D. Batchelor** and **Mr. M. E. Lee**



T. D. BATCHELOR

M. E. LEE

have been appointed joint managers of the new division. Both have previously served with building and civil engineering firms.

**Sir Maurice Adams, K.B.E.**, at one time Civil Engineer-in-Chief at the Admiralty, has joined the board of Ruddock and Meighan, Ltd., as chairman. Among his other appointments, **Sir Maurice** is chairman of Wilson Lovatt and Sons, Ltd. **Mrs. M. Meighan**, who is relinquishing the chairmanship of Ruddock and Meighan, has assumed the office of deputy-chairman.

**Mr. H. B. Elliott**, who was previously service manager of A.E.C. (Sales) Ltd., will be redesignated general service manager. Also to be redesignated is **Mr. A. V. Head**, who has been deputy service manager since 1959. His new title will be deputy general service manager. **Mr. W. F. Hurle**, who has been assistant service manager (commercial) since 1955, will be redesignated service manager (home), and **Mr. P. F. Cutmore**, who has been dealing with overseas matters within the department since 1956, will become service manager (export).

Shell-Mex and B.P., Ltd., have announced the following appointments: **Mr. A. L. King, M.B.E.**, to be general manager—operations; **Mr. S. D. Colwell** becomes assistant general manager—operations; **Mr. A. C. Durie** is appointed general manager—industrial sales; and **Mr. E. Rendall** becomes assistant general manager—industrial sales.

After 47 years with Koehring Co., Milwaukee, Wisconsin, **Mr. E. J. Goes**, publicity manager, has retired. He plans to continue in some phase of advertising, making his experience available to industry on a consulting basis.

**Mr. Goes** has served in various key capacities in trade association groups, and was recently chairman of the Industry Promotion Subcommittee of the Power Crane and Shovel Association. He will be succeeded by the company's advertising manager, **Mr. Martin B. Jaeger**.



E. J. GOES

**Mr. Alan Potter**, overseas manager, has been appointed general sales manager of Lansing Bagnall, Ltd. **Mr. E. H. Wheeler**, deputy overseas manager, becomes export sales manager, and **Mr. C. A. Barr**, liaison engineer, has been appointed manager of the company's technical services division.

Mercantile Credit Co., Ltd., have announced that **Mr. M. E. Pratt**, previously a plant and machinery representative at Leeds, has been appointed sub-branch manager at the Middlesbrough office.

**Mr. N. M. Hadfield**, chairman and managing director of Hadfields (Merton), Ltd., is to relinquish the managing directorship of the company. **Mr. P. McC. Hadfield** and **Mr. B. A. Shattock** have been appointed joint managing directors.

**Mr. J. R. Whiting** has been appointed to the board of Gilbert-Ash, Ltd., succeeding **Mr. L. A. Smith** who has retired. **Mr. Smith** has served in the Bovis group for 46 years, the last 13 years as a director of Gilbert-Ash, Ltd.

**Mr. R. Lewis Stubbs**, director of the Zinc Development Association, has been appointed director-general of the Lead Development Association and the Zinc Development Association. **Mr. Stubbs** will be responsible for the overall direction and expansion of the work of both organisations, and will represent them at international meetings.

**Mr. J. E. Swindlehurst, O.B.E.**, director of the Bituminous Road Development Group since June, 1957, has retired. **Mr. E. J. R. Kennerell** will act as director in his place.

**Mr. W. J. McCallum**, advertising manager of Albion Motors, Ltd., has retired after completing nearly 50 years' service with the company.

Among passengers recently disembarking in this country from New York were **Mr. John Hanson**, chairman of Myton, Ltd., and **Mr. R. H. R. McGill**, a director of Balfour and Beatty and Co., Ltd.

**Mr. Harry Wogden** who joined the India Tyre and Rubber Co., Ltd., in September as general works manager has been elected a director of the company.

**Mr. N. A. Morling**, who was appointed a director of Ferodo, Ltd., in July, will succeed **Mr. G. S. Sutcliffe** as chairman. **Mr. Sutcliffe** resigns his directorship of Ferodo and assumes the chairmanship of three other companies of the Turner and Newall organisation (Turner Brothers Asbestos Co., Ltd., J. W. Roberts, Ltd., and Glass Fabrics, Ltd.), an appointment held by **Mr. Morling** for the past four years.

**Mr. Norman Jepson** has been appointed chairman and managing director of The Walpamur Co., Ltd., and **Mr. L. Hodgkinson** becomes secretary.

### MUNICIPAL

**Mr. Eric G. Felgate**, borough architect at Keighley for 36 years, will retire in March.

The new area surveyor to Staffordshire C.C. at Lichfield, succeeding **Mr. R. B. Steventon**, is **Mr. Alan Onions**.

Daventry B.C. have been recommended to appoint **Mr. W. H. Prior**, at present assistant borough surveyor at Tenterden, as assistant surveyor.

**Mr. Frank J. Grevatt, A.M.I.C.E., A.M.I.Mun.E.**, chief engineering assistant at Chelsea, has been promoted to deputy borough engineer and surveyor. He is succeeded as chief engineering assistant by **Mr. P. R. Hennings, G.M., A.M.I.C.E., A.M.I.Mun.E.**, principal engineering assistant.

**Mr. J. A. Kemp**, deputy borough architect and buildings surveyor at Dewsbury, has resigned.

### THE VITAL LINK

To the Editor of "The Contract Journal."

Sir,—In sending to you and your staff my best wishes for 1961 I would like to draw attention again to the valuable work done for the industry by the technical journals. With all the complexity of present day building I think it would be true to say that without you we would be greatly hampered in our efforts to improve efficiency, safety and production.

The coming year sees our industry striving to increase production with a limited labour force and it is obviously only by the increasing use of mechanisation that output can be significantly stepped up. There is a very real and great opportunity for new and better machines to be absorbed into building and by the very great pressure of demand I think that we are on the verge of a big step forward in the mechanisation of building. Indeed, this big step looks as though it will condense into the next decade the progress equivalent of the last fifty years.

In this big step forward you will have a vital part to play in bringing the various parties together. You will be the link that serves to join the various businesses and interests that together make building.

Yours etc.,

KENNETH HILL  
(President).

The Institute of Building Estimators,  
London, S.W.7.



## SIX-STOREY OFFICES FOR REMPLOY AT CRICKLEWOOD

**R**EMPLOY HOUSE, a six-storey head office building for Remploy, Ltd., the national organisation for employing the disabled, was opened recently at Cricklewood by the Minister of Labour, Mr. John Hare, O.B.E.

Costing about £225,000, the building has a floor area of 56,000 sq. ft. and is sited about 250ft. back from the Edgware Road. It was designed by Mr. George Watt, A.R.I.B.A. and built by Bovis, Ltd., for lease to Remploy. A single-storey development shop has also been erected on the

site to provide specialist facilities for developing new products.

The structure of the main office block consists of a frame of pre-cast concrete columns and beams on reinforced concrete foundations. The pre-cast columns are exposed on the elevation with fair-faced finish from the formwork.

On each floor level, a system of pre-cast, pre-stressed boundary beams spans between each pair of columns forming a ledge for an in-situ reinforced concrete floor slab. Additional support is obtained by a system of pre-stressed, pre-cast concrete secondary beams to form a grid

system. This continues for six storeys up to the roof.

External brick cladding is supported by pre-cast reinforced concrete boot lintols at each floor level with pre-cast reinforced concrete eaves fascia units at roof level.

There is a large plate glass window, framed with polished hardwood, overlooking the main entrance hall. The inner and outer doors are glazed, with polished hardwood, and the floor is in terrazzo with small infill panels in ceramic mosaic. Each entrance has a reinforced concrete canopy with applied blue cellulosed metal fascia plate. The two columns under the canopy of the main entrance are faced with marble.

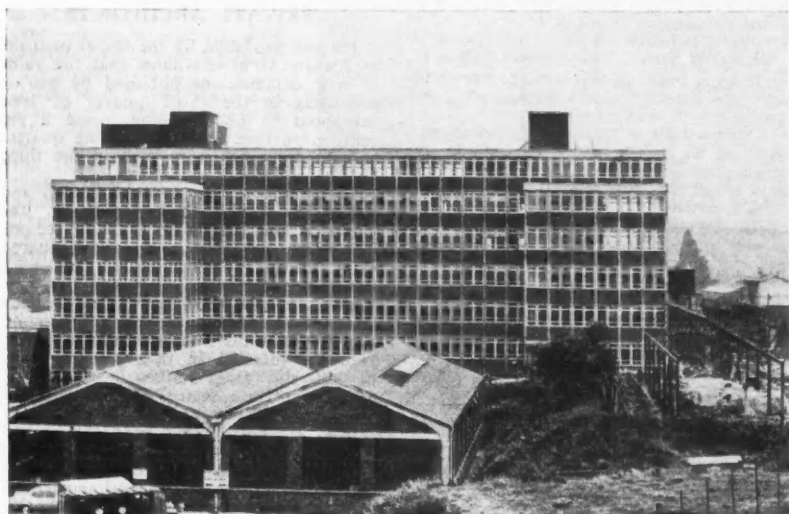
A lift and stairs are provided at each end of the building, the lift wells and staircases being of reinforced concrete cast in situ. The lifts are dark bronze, sheet steel finished with power-operated landing door with architrave trims. They are fully automatic with collective control, and each lift is fitted with a sound isolated platform and load non-stop device to avoid overcrowding. Staircases are finished with hardwood treads, and lino-inserts and non-slip rosings. The landings have hardwood strip flooring.

The painted galvanised metal windows are continuous between columns providing ample natural light and ventilation to all offices. They have bottom fixed sub-lights, vertically pivoted centre panes and horizontally centre hung top vents.

Suspended ceilings are provided throughout consisting of stove enamelled metal acoustic panels.

The heating is provided by a low-pressure, accelerated hot water system, fired by automatic oil-fired boilers with thermostatic control which also supplies the hot water installation. The heating generally is by finned Vectair panels of a continuous nature under the window sills with metal casings in sheet steel at the base and an opening grille at the head.

The single-storey development building, measuring 160 by 120ft., is brick built, with 11in. cavity walls, and a north-light truss roof. It has a granolithic floor and is heated by electric night-storage units.



Remploy House with development shop under construction on the right

## PROGRESS ON WESTMINSTER 23-STOREY FLATS Mayor Performs Topping-out Ceremony

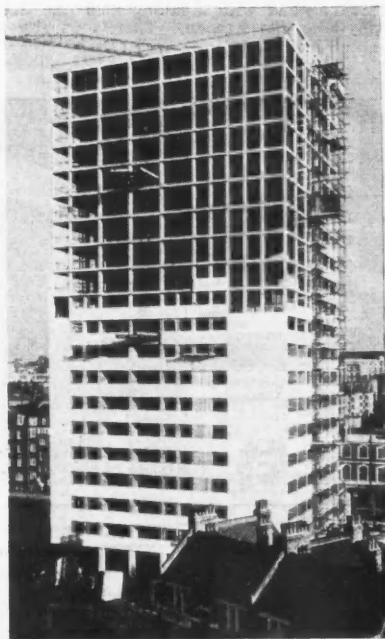
**A** TOPPING-OUT ceremony, marking the completion of the upper frame of a 23-storey block of flats under construction for Westminster City Council, was performed recently by the Mayor of Westminster at Hide Place, London, S.W.1.

To be known as Hide Tower, the block will contain a total of 160 flats, and is situated on a site bounded by Hide Place, Vincent Street, Regency Street, Chapter Street and Easterbrooke Street. The site has a gross area of 1.55 acres and the building comprises a tower block 212ft. high, 88ft. long and 68ft. wide, with flats on 20 storeys above an open ground floor which is of two-storey height. There are 60 one-room flats, 80 two-room flats and 20 four-room flats. Any sense of insecurity owing to height will be minimised by the provision of balconies extending the full width of the living room and wide window sills. The first 10 floors will include the 20 four-room flats, 40 of the two-room flats and 20 of the one-room flats. The next 10 floors will contain the remaining 80 two-room and one-room flats.

### Underfloor Heating

A laundry and a communal room will be contained on the 21st floor. Two high speed inter-connected lifts will serve all floors, and refuse disposal will be by means of chutes. The flats will be provided with electric under-floor heating and water storage heaters. There will be ample socket outlets on the electric ring main system, but the tenants will have the choice of gas or electricity for cookers

and refrigerators. There will be provision for the parking of 35 cars within the site,



General view of progress on Hide Tower

and numerous trees and shrubs will be planted in the open spaces.

The superstructure of the building is of in-situ reinforced concrete up to second floor level. Above this, precast concrete frame units are anchored by precast reinforced concrete floor slabs to a central core, which runs the full height of the building and contains the lift well, refuse chutes and central landing. Cladding, designed for fixing from within, consists mainly of precast reinforced concrete panels faced with Norwegian quartz exposed aggregate, the largest panels measuring 12ft. by 10ft. and weighing about 1½ tons.

Work commenced on the block in October, 1959, and is due to be completed by June, 1961. The largely pre-fabricated method of construction has directly contributed to the speed of erection of the superstructure, and a feature of this method has been the elimination of scaffolding.

Stillman and Eastwick-Field, London, W.C.1, are the architects and the structural engineers are Charles Weiss and Partners, London, S.W.8. The main contractors are John Laing and Son, Ltd., London, N.W.7.

## INDUS BASIN PROJECT More Tenders Soon

As officially announced on page 36, the West Pakistan Water and Power Development Authority are very soon to call for tenders for major canal works included in the Indus Basin Project.

Interested contractors are being invited to submit their names to the Authority's consultants, Tipton and Kalmbach, Inc.

# Talking of Safety

by

"DRAGEE"

WE stood in a light drizzle of rain, donkey jacket collars turned up, looking at the cluster of old factory buildings, now about to be demolished. A boiler house with a short square chimney stood at the left of the group, with a grimy fuel store next to it. Some thirty yards away was a two-storey brick building which had once housed a pair of gas compressors, and a store with an office on the floor above. Albert Davies and I looked at this closely.

Years of steady vibration had weakened the joints in the brickwork, and very little effort would be needed to pull it down. However, the back of the building stood on the works boundary, with a fairly busy street of shops on the outside.

"You'll need some protection above the pavement," I said. "And since the brickwork is a bit weak do you think you should consider shoring the wall on the outside?"

"Well, we've got to get permission to close a length of pavement for the scaffold anyway," said Albert. "So it won't be any trouble giving it a bit of extra support. The wall will come down safely enough if we drop it a few courses at a time and keep the ends keyed as we go along."

The machinery had all been removed and Albert would simply have to pull down the building and break out the old footings. We moved on to the boiler house. Here again, the old plant had been taken away, leaving an empty building and a great deal of filth.

"The old coal-fired boiler plants make a pretty shocking mess when you pull 'em down," said Albert. "The boys will probably want a change of overalls for this lot."

"Talking of protective clothing," I said, seizing the opportunity, "I expect you know we make it a rule for every man engaged on demolition work to wear a safety helmet—and that goes for you, too!"

"Dragee," who is a practising safety engineer, would welcome subjects for discussion in this column. All names of persons mentioned in these discussions are entirely fictitious. Questions of law are expressed as the author's personal opinions and are not claimed to be authoritative.—EDITOR.

Albert grinned. "Don't worry. I've got one of my own," he said. "It's easy enough to get people to wear these things if you insist upon it right from the start. It's when you try to introduce them in the middle of the job that you run into trouble."

"That's not quite everything," I went on. "Where there's dust there's danger to the eyes. We expect the men to wear goggles as well. I'll see that those are provided. You should also try to persuade the men to bring safety footwear with them."

Albert glanced down at his own elegant and well-polished shoes. Our eyes met. "Okay," he said. "Safety boots in future."

The old building was covered over with asbestos sheeting, grimy with smoke, and patched in several places.

"No need for me to warn you about men walking on the sheets," I said, "but you might have to keep an eye open until they're all down."

"I'll watch it," said Albert.

He carefully studied the brickwork where the whitewash had flaked off the surface, then bent down to look more closely at the wall just above the footings. He scraped away some of the old cement rendering and pointed to the exposed material. It had partly disintegrated, and was obviously unable to provide proper support for the wall. "Have to watch that," he said.

"What about the chimney?" I asked.

"We'll strip the roof first, then we'll scaffold up from the ground and take it down gradually. The whole building is dicey and we'll have to go steady. Pity we can't put a charge under it, but it's too near the highway—and the factory manager wants us to save the firebricks."

"Probably wants to save his drains as well," I said. "Tell me, Albert, what do you consider to be the commonest fault in demolition work—I mean, the kind of fault which leads to accidents?"

"Trying to do too much at once," said Albert. "It's very tempting to take a big bite out of a wall, particularly when you're on piecework or bonus, but any old hand at the game will tell you it leads to trouble. Some gangs will try to topple a wall instead of demolishing it a few courses at a time—and with a falling load like that anything can happen. There's usually a

few big lumps flying through the air. Over-hasty demolition men are a danger to themselves and everyone else on the job. They don't look ahead far enough to see the dangers. That's where the competent man comes in. I remember an accident which nearly did for a mate of mine when his foreman had some tie rods cut through without stopping to think what they were there for. He found out soon enough. They were tying the eaves beams of a brick arch roof and it wasn't many minutes before the lot fell in. My Uncle Luke used to say that Samson did a first-rate demolition job when he pulled down the house of the Philistines. He knew what he was doing all right, and that's more'n you can say for some of these perishers we get."

## MORE COMMISSIONS FOR PRIVATE ARCHITECTS

Figures published by the Royal Institute of British Architects show that the value of new commissions obtained by private architects in the third quarter of 1960 amounted to £276 million, some 2 per cent. more than in the preceding quarter and 23 per cent. more than in the third quarter of 1959.

The increase was unevenly spread, and offices in London and Middlesex, the Midlands and the North Western regions showed a decrease in new work compared with both the preceding quarters and with the third quarter of 1959. Similarly, new commissions for the larger firms dropped by about a third compared with the second quarter, while the smaller firms, benefiting from the increase in new housing commissions, did rather better.

In the private sector, commissions for industrial buildings and offices and banks showed a fall compared with the second quarter, but this was balanced by an increase in housing and other commercial building. Housing orders also showed an increase in the public sector, though this may reflect only the general pressure of work on local authority architects' departments which has led them to put out an increased volume of work to private architects.

## STUDY-HOLIDAY TOUR OF CZECHOSLOVAKIA

In its annual study-holiday tours the Town and Country Planning Association has now visited about twelve countries in Europe. The 1961 tour will be to Czechoslovakia. Arrangements have been made by the Wayfarers Travel Agency and the tour will be led by Sir Frederic J. Osborn.

Dates of the Czech tour are May 9-23. Visits will include the Ministry of Construction and the Design Centre in Prague, the Bratislava Research Institute, industrial, suburban and rural housing schemes, and co-operative and state farms. Meetings with professional organisations as well as local authorities are being arranged.

T.C.P.A. tours are open to members of the Association, members of planning and related professions, and friends and relatives. Price: T.C.P.A. members £80; non-members £82 10s. Further details are now available from the Tour Secretary, 28 King Street, London, W.C.2.

## BOOKS RECEIVED

**Estimating for Building & Civil Engineering Works**, by Spence Geddes (2nd Edition). Revised by E. Drury, B.A., A.R.I.B.A. Publishers: George Newns, Ltd., Tower House, Southampton Street, London, W.C.2. Price 63s.

**Construction Contracting**, by Richard H. Clough. Publishers: John Wiley and Sons, London and New York. Price 78s.



"Tut, tut, and where are our safety boots this morning?"

## BASILDON CHURCH INCORPORATES LAMINATED ARCHES

**L**AMINATED timber arches have been incorporated in a combined church and church hall erected in the form of a right angle at Basildon, Essex.

The church hall roof is supported by three laminated arches of 32ft. 6in. span at 30 degrees pitch, 10ft. to the eaves and 19ft. 4in. to the ridge. The arches are spaced on 13ft. 7in. centres carrying 9in. by 2in. laminated purlins on 3ft. centres. Laminated eaves beams, 13in. by 4in., cant cut at 30 degrees were incorporated to take the heads of window frames.

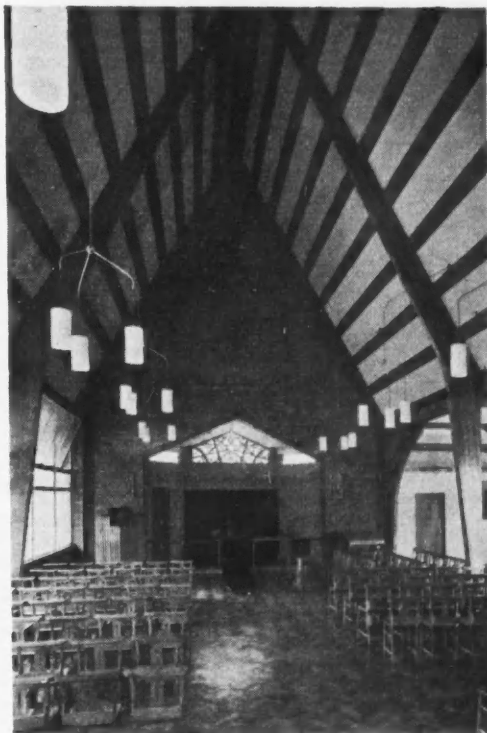
The church roof consists of 27ft. overall span arches with a 60 degree pitch, 14ft. 6in. to the eaves and 37ft. 10in. to the ridge. Spaced on 16ft. centres, the arches have solid blocking built out at eaves level to carry part of the overhanging roof. The laminated purlins were 9in. by 4in. on 2ft. 10in. centres. The 4in. dimension was normal to the roof.

Both sets of purlins were attached to the arches by means of 12 gauge galvanised steel saddle shoes.

Timber used in the arches was Sealex Douglas Fir with a clear varnish finish, the glue being Urea Formaldehyde.

The roof was of fully interlocking pantiles on 1in. by 1in. battens over one layer of roofing felt, 2in. Stramit board and 4in. by 2in. rafters, with a ceiling of Asbestolux.

Gunton and Gunton, London, E.C.1, were the architects. The contractors were Charles S. Foster and Sons, Ltd., Loughton, Essex.



An interior view

## GEORGE WASHINGTON BRIDGE BUS STATION

The Port of New York Authority have let a \$9.6 million contract to W. J. Barney Corporation and William L. Crow Construction Co., for the superstructure of the George Washington Bridge Bus Station which will feature New York's first example of the work of Prof. Pier Luigi Nervi.

The concrete roof, designed by Prof. Nervi, will comprise 26 triangular sections, 14 of which slope upward from a row of columns in the centre of the building. Each triangular 92ft. by 66ft. section will be made of 36 precast concrete panels. The sides of the raised roof sections and of the bus station's itself, will be exposed precast concrete structural members forming openings to facilitate ventilation of the bus platforms and the expressway beneath the building.

Foundations have already been built, as have the roadway and retaining walls of the depressed expressway. Contracts have also been let for steel fabrication and erection of steel. The superstructure contract includes construction of the roof structure, electric, heating and ventilating equipment and all other finishing work.

Construction of the superstructure is commencing and is due for completion in mid-1962. The bus station is part of the \$183 million project to add a six-lane lower level to the George Washington Bridge which connects New York and New Jersey (see *The Contract Journal* June 2, 1960).

## SOUND ABSORBING MATERIALS

Sound absorbing materials are being used increasingly for the control of the acoustical properties of concert halls and auditoria as well as noise reduction in offices, restaurants and factories.

Measurements of the sound absorption coefficients of suitable materials have been carried out for a number of years at the National Physical Laboratory. They have included most of the proprietary materials used in this country as well as forms of special treatment and mounting.

The results of these investigations are now made available for the benefit of users, manufacturers, architects and others concerned with the application and properties of sound absorbents. They have been brought together in a booklet\* published last week.

The main section of the booklet consists of tables of the absorption coefficients of over 300 materials measured at the Laboratory. Both the materials and the method of mounting employed are described. The materials are classified broadly according to their physical characteristics, those of the same acoustical type being grouped together. The tables are accompanied by a discussion of the results.

Recent developments in the design of sound absorbent materials are described as well as the various types and the physical processes involved.

\*"Sound Absorbing Materials" by E. J. Evans and E. N. Bazley, Published for D.S.I.R. by H.M.S.O., price 3s. (by post 3s. 4d.); U.S.A., 54 cents.

## SITE LABOUR IN CONSTRUCTION INDUSTRIES

**A** TWO-DAY course on site labour in the building construction industries is to be held in London on March 20 and 21 by the Industrial Welfare Society.

The course, which is designed primarily for those firms employing more than 500 workers each, deals exclusively with the problems of managing manual labour on sites. Matters associated with professional, technical or clerical staff will not be discussed.

The programme is a repeat of a course held in November, 1960, and the speakers will include:—Mr. S. T. Boullier, personnel officer, John Laing and Son, Ltd.; Mr. R. W. Daniel, personnel manager, Wates, Ltd.; Mr. E. Poxwell, production manager, John McLean and Co., Ltd.; Mr. P. W. Coles, personnel officer, The Cementation Co., Ltd.; Mr. C. Mann, "Wimpey News" Editor, George Wimpey and Co., Ltd.; Mr. S. G. Ward, safety officer, F. G. Minter, Ltd.; Mr. W. J. Davies, group training officer, Taylor Woodrow Organisation; Mr. E. Shneerson, building group executive, Marks and Spencer, Ltd.

Further details of the course may be obtained from the Industrial Welfare Society, Robert Hyde House, 48 Bryanston Square, London, W.1.

## BRITISH STANDARDS

### Road Marking Materials: Part 2: Hot-applied Thermoplastic Materials (Inset Type)

Extra safety for pedestrians could result from horn hooks, which are also standardised (B.S.3262: Part 2: 1960), which applies to inset thermoplastic road marking materials—widely used for pedestrian crossings and centre white lines in towns.

The standard follows closely the standard for the superimposed type of thermoplastic materials (B.S.3262: Part 1), which was issued recently but reflectorisation is not provided for since this is rarely used or useful in well-lighted streets. Yellow markings are, however, dealt with.

The composition of the materials is laid down, together with the manufacturing and laying procedures to be followed. As a further check on quality, appropriate tests are given in appendices.

It is required that blocks of thermoplastic materials claimed to conform to the standard shall be marked: "B.S.3262: Part 2: 1960." Manufacturers who wish to do so may also use, under licence from the British Standards Institution, the B.S. Kitemark, whose appearance on a product gives an independent assurance that the product does comply with the requirements of the relevant British Standard. Price 5s.

### Mild steel forged triangular lifting eyes for use on wire rope pulley blocks

The triangular lifting eyes specified in this new British Standard (B.S.3317:1960) are intended for crane loads above the capacity of ordinary standard hooks. A range with safe working loads from 60 to 200 tons is specified. Together with ramshorn hooks, which are also standardized up to 200 tons, they are recommended for the electric overhead travelling cranes specified in B.S.466. For a given safe working load, the triangular lifting eye has the lightest form.

The mode of use is two point loading with an included sling angle between 0 degrees and 90 degrees. The eyes are not intended for single point load through one fitting.

Material, form, dimensions, workmanship, heat treatment, testing, marking and the provision of a maker's certificate are specified. Notes on design are appended. Particulars of suitable thrust bearings are also given. Price 5s.

Copies of these British Standards may be obtained from the British Standards Institution, Sales Branch, 2 Park Street, London, W.1.



## FOR THE DIARY

## Jan. 5

Annual general meeting of the Federation of Registered House-builders, London.  
Annual general meeting of the Prestressed Concrete Development Group, Monsieur Y. Guyon on "Recent Projects and Works in Prestressed Concrete."

## Jan. 6

Meeting of the North West branch of the Contractors Mechanical Plant Engineers, Club Ship "Landfall," Canning Dock, Liverpool, 8 p.m. Discussion on plant maintenance.

## Jan. 10

Meeting of the Institution of Civil Engineers at Great George Street, London, S.W.1. Paper: "The Loading of Light Railway Tracks", by J. M. Kesson.

## Jan. 11

Meeting of the Hants and Sussex branch of the Contractors' Mechanical Plant Engineers, Black Dog Inn, Emsworth, Hants.  
Annual general meeting of the Eastern Federation of Building Trades Employers, Garden House Hotel, Cambridge.

## Jan. 12

Meeting of the Institution of Civil Engineers, Great George Street, London, S.W.1. Informal discussion, "Achievement of Economy by Improved Design and Materials for Track and Railway Structures", introduced by F. J. J. Prior, A. C. Edrich and J. S. Campbell.

Meeting of the Institution of Structural Engineers at 11 Upper Belgrave Street, London, S.W.1, at 6 p.m. Paper: "The Structural Use of Aerated Concrete", by A. Short.

Meeting of the London branch of the Contractors Mechanical Plant Engineers, Hendon Way Hotel, Hendon Central, London, N.W.4. 7.30 p.m. Discussion.

Annual general meeting and annual dinner of the Scottish Plant Owners Association, Central Hotel, Glasgow.

## Jan. 13

Meeting of the Birmingham branch of the Institution of Plant Engineers, Imperial Hotel, Birmingham. "Survey of Single Bucket Excavator Development" by Mr. T. Broughton of Ruston Bucyrus, Ltd.

## Jan. 17

Meeting at the Institution of Civil Engineers, Great George Street, London, S.W.1. Paper: "A Civil Engineer and Town Planning", by S. G. Wardley.

## Jan. 18

Meeting of the Reinforced Concrete Association at 11 Upper Belgrave Street, London, S.W.1, at 6 p.m. Paper: "Structural Analysis and Digital Computers", by J. Munro and A. Edwards.

Federation of Master Builders London Region luncheon meeting for House-builders, Grosvenor House, London, 1 p.m.

## Jan. 19

Meeting of the Derbyshire branch of the Contractors Mechanical Plant Engineers, County Hotel, Nottingham. Film show and discussion.

## Jan. 23

Meeting of the County of London branch of the Faculty of Building, The Building Centre, London, 7 p.m. Practice Arbitration.

Annual general meeting of the Liverpool Regional Federation of Building Trades Employers.

Annual general meeting of the South Wales Federation of Building Trades Employers, Cardiff.

## Jan. 24

Annual general meeting of the London Master Builders Association, Park Lane Hotel, London, 10.30 a.m.

## Jan. 25

Alfred Bosson Lecture at the Royal Society of Arts, John Adam Street, Adelphi, London, W.C.2. "Architecture in Transport" by F. F. C. Curtis, Dr. Ing., A.R.I.B.A., architect to the British Transport Commission.

## Jan. 26

Meeting of the Institution of Structural Engineers at 11 Upper Belgrave Street, London, S.W.1, at 6 p.m. Paper: "The Design and Construction of Extension to British European Airways Engineering Base at London Airport", by P. B. Edwards.

## Jan. 27

Annual general meeting of the Southern Counties Federation of Building Trades

Employers, Connaught Rooms, London, 10.30 a.m.

Annual general meeting of the London Master Plasterers Association, Charing Cross Hotel, London, 11 a.m.

## Jan. 28

Annual dinner and dance of the London branch of the Contractors' Mechanical Plant Engineers, Criterion Restaurant, Piccadilly.

Annual dinner and dance of the London branch of the Contractors' Mechanical Plant Engineers, Criterion Restaurant, London.

Annual dinner and dance of the North West branch of the Contractors Mechanical Plant Engineers, Reece's Banqueting Suite, Clayton Square, Liverpool.

## Jan. 31

Annual general meeting of the Northern Counties Regional Federation of Building Trades Employers, Sunderland.

Annual dinner of the East Midlands Association of the Institution of Civil Engineers.

## Feb. 2

Annual dinner of the North Western Association of the Institution of Civil Engineers.

## Feb. 3

Annual dinner of the Building and Civil Engineering Contractors' Section of the Birmingham and District Industrial Safety Group, Midland Hotel, Birmingham.

## Feb. 6

Meeting of the Society of Engineers at Geological Society, Burlington House, London. Presidential Address by Mr. W. E. Humphrey, F.S.E.

## Feb. 7

Annual dinner of the National Federation of Building Trades Employers, Grosvenor House, London.

"Heating the Home" Exhibition, sponsored by the Eastern, North Thames, South Eastern and Southern Gas Boards, at Royal Horticultural Hall, London, Feb. 7-18.

## Feb. 8

Annual general meeting of the National Federation of Building Trades Employers, R.I.B.A., London.

## Feb. 14

Annual dinner of the Institute of Builders, Guildhall, City of London.



Pictured left is Heaton Park Court, which as reported in last week's issue, is the first block of multi-storey flats to be completed under Newcastle upon Tyne's redevelopment scheme. Built by Leslie and Co., Ltd., the block has a reinforced concrete frame on pile foundations and external walls of facing brick. It contains 47 two-bedroom flats, 24 one-bedroom flats and a ground floor flatlet. Two passenger lifts are installed and heating is by gas fires. The design is by the city architect, George Kenyon, Dip. Arch., A.R.I.B.A., Dip.T.P., A.M.T.P.I., with John Liversedge and Associates acting as consulting engineers.

## ST. MARYLEBONE MULTI-STOREY GARAGE

A compulsory purchase order made by St. Marylebone Borough Council for the acquisition of a site in Wells Street, London, W.1, for a multi-storey garage and service station, has been confirmed by the Minister of Housing and Local Government.

An objection to the order came from Celus Properties, Ltd., who, by the time the order was made, had started to build a block of showrooms on the site. The building was begun after the Council had announced that they were considering making a compulsory purchase order. At the inquiry the Council said they thought the building could be converted into a multi-storey garage.

## YORKSHIRE FIRM'S SAFETY AWARDS

Awards in the annual safety competition of the Shepherd Group of Companies were made recently by the chairman and managing director, Mr. Peter M. Shepherd, at York.

Two of the prizewinning centres, F. Shepherd and Son, Ltd. (York small works service centre) and Alne Brick Co., Ltd., had no accidents reported during the year, while the Hull Centre of F. Shepherd and Son, Ltd., had only one accident reported.

Thirteen centres, involving nearly 2,000 employees, took part in the competition.

## Trade and Company News

## HIGH OUTPUT WEIGH-BATCHING PLANTS

A NEW range of Elba self-contained concrete aggregate weighing and batching plants has been introduced to this country by A.C.E. Machinery, Ltd., Porden Road, London, S.W.2.

The batchers are divided into two series, namely the Duon and Trion, differing only inasmuch as the cement weigh-batching component of the former is separate from the star aggregate batcher; the Trion star batcher incorporates an integral cement weigher, thus forming a composite assembly.

The basic principle of these machines is that the aggregates are stock-piled at ground level in separate compartments radially constructed about the central weigh-batcher. The aggregates are divided into their respective compartments direct from transport vehicles and stock-piled over discharge doors, located in a circular cover plate and the centre of the star, beneath which is located the weigh bin.

Several systems of stock-piling are available, according to size of batcher and output required; for moderate capacities a cable-drawn handscraper is used, the winch being fixed upon a turntable located centrally on top of the star batcher. Increased capacity may be attained by employing a boomscraper which incorporates a steel boom pivoted at the centre of the star batcher and supported at its outer extremity by an A-frame attachment carried on two rubber wheels. A drag-line scraper bucket operated by winch gear attached to the boom is press-button controlled by an operator seated at the A-frame, who can also rotate the boom from one compartment to another.

Where larger quantities of aggregate are to be weigh-batched, a power traversed radial scraper boom with drag-line operated is accommodated in a steel cabin mounted upon the boom above the centre of the star. The in-haul and out-haul of the scraper bucket and the traversing

motion of the radial scraper are electrically controlled by finger switches situated in the driver's cabin.

The standard weigh bin is of 28 cu. ft. capacity and intermediate sections are added to increase this to 53 or 71 cu. ft. as desired. Batching is speedily carried out and the proportions of aggregate mix are controlled by the total weight method; a selected discharge door is opened until the pointer on the weigh bin dial reaches a predetermined point on the weigh scale, then the next door is opened until the next predetermined point is reached and so on, until all aggregates are loaded.

The complete weighed batch is normally discharged into the loading skip of the mixing plant and the next batch may then be prepared. The output of batched weighed aggregates is given by the manufacturers as follows: 60 cu. yd. per hour with radial scraper; 20/25 cu. yd. per hour with boom scraper; 15/20 cu. yd. per hour with Bully handscraper; 10/15 cu. yd. per hour with Dalli handscraper. Total stockpile within the range of the scraper equipment is normally 220/280 cu. yd. of material.

While the equipment deals with the handling of aggregates, a medium for weigh-batching cement is also provided. This is accomplished by a cement screw conveyor with integral weigh mechanism and weigh bin of 550lb. capacity. The precision weigh mechanism is set at predetermined batch weight and automatically cuts off when this quantity has been fed to the hopper, ready for discharge into mixer loading skip or direct to mixer drum.

A cement valve or cut-off door attachment allows the conveyor inlet port to be connected to the discharge outlet or any conventional cement storage silo. The discharge doors located beneath the aggregate stock-piles are hand-lever operated and give controlled discharge to the weigh bin situated beneath.

## AIRMIX INDUSTRIAL DUST COLLECTOR

FOR industrial dust collection, Thermix Industries, Ltd., 143 Maple Road, Surbiton, Surrey, have developed the Airmix wet collector—a self-induced spray type vertical venturi wet washer which separates the dirty water from the cleaned gases by means of centrifugal action.

The washing water is fed tangentially to the venturi throat by two, three or four pipes depending on the size of the collector. The gases flowing through the throat at high speed spread the water on to the cylindrical surface in a continuous film and at the same time carry it vertically. The great difference in the velocity of the two fluids causes the gas to break up the waves which form on the surface of the water film, thus intimately mixing the dust laden gas and the water droplets in the fine spray produced.

The mixture then enters a tapered diffuser section where its speed is slowed down and the dust particles which have so far escaped are wetted as the dust laden gas again passes through a cloud of water droplets which, owing to their tendency to agglomerate, have a slower upward movement.

Upon reaching the top section of the Airmix the mixture is diverted into a ring of curved vanes which impart a strong rotational motion which separates the gases and water by centrifugal action. Any particles still in a dry state are wetted by impingement with the vanes. The dirty water is evacuated by a discharge pipe and the cleaned gases pass out through a chimney.

There are two types of sludge disposal system available, one consisting of a small three-compartment tank which separates the slurry through a discharge valve and another consisting of a large two-compartment sludge settling and dewatering tank in which the sludge is allowed to settle for eventual discharge down a chute into lorries for disposal, the clean water being fed in both cases back to the venturi throat.

The unit is constructed of mild steel and is available in a range of standard sizes with capacities from 1,300 c.f.m. to 30,000 c.f.m. For handling larger volumes a number of smaller units can be operated in parallel.

## RANGE OF POWER SOURCES FOR ARDEN MIXERS

DIESEL, Calor gas, petrol or electricity may be used to power the new Four Power range of concrete mixers, which is being made by Arden Plant, Ltd., Poole, Dorset. The range comprises 4/3 and 5/3½ cu. ft. models.

The 5/3½ diesel mixer is powered by a 1½/3-h.p. Petter or Lister engine. The totally enclosed drive, which is the same as for the rest of the range, is by means of a special belt through two needle roller universal joints, housed within the drum supporting beam, to a 40:1 worm gear box.

Of all-steel construction, the drum is mounted direct on to the gearbox and can be removed quickly by a single bolt. Tipping is by means of a large diameter handwheel, through steel machine-cut gears, giving a 6:1 reduction.

The steel chassis is electrically welded. Total weight of the machine is 6½cwt. It is mounted on two 16 x 4 cushion or pneumatic tyres, and is fitted with a retractable carrying handle which is locked away when not in use.

The 4/3 mixers are of a similar design and are fitted with a special clutch, allowing them to idle when not in use.



Arden 5/3½ cu. ft. diesel mixer

## SWEDISH V-BELT RANGE FOR U.K.

The Swedish range of Trelleborg high capacity V-belts, which are claimed to transmit more power with a lower load on axles and bearings, has been introduced into this country by Bolinders Co., Ltd., Coronation House, 4 Lloyds Avenue, London, E.C.3.

The belt, which has a grommet finish, contains two power-transmitting endlessly-twisted heavy gauge cores of rayon cable cord, embedded in rubber and located on the pitch of the belt. Less adjustment and control is necessary, state the manufacturers, because of the greater degree of stretch, and heat development is eliminated by virtue of the belt's construction, giving longer life.

## NEW STEELWORK PRIMER

A new primer for iron and steel structural work, which is non-toxic and has no odour or taste after the application has dried out, has been introduced by Cowanite (Anti-Corrosive), Ltd., Newstet Road, Kirkby Trading Estate, Liverpool.

Among the several claims made for this material are that it gives adequate protection to work which may have to be left for long periods prior to painting, can be welded on without destroying the surface and without giving off obnoxious fumes, and can be stored indefinitely.

## Trade and Company News

## NEW COMPANIES

The undermentioned particulars of new companies recently registered are taken from the daily register compiled by Jordan and Sons, Ltd., company registration agents, 116 Chancery Lane, London, W.C.2:—

Roadways (Coventry), Ltd., 234 Terry Road, Coventry, road makers, surfacers, asphalt and tar macadam contractors, etc. £1,000. Directors: Patrick Deane, 234 Terry Road, Coventry.

Deltic Plant, Ltd., 100 Fore Street, Hertford. Letters on hire of excavators, earth-moving appliances, etc. £1,000. Directors: Not named. Subscribers: Kenneth T. Wright and John V. Wilson, 100 Fore Street, Hertford (accountants).

Private Enterprise Builders, Ltd., 139 High Street, Tonbridge, Kent. £1,000. Directors: William J. Jones, 46 Church Road, Pembury, Kent (managing director); Averil N. Leach, Playfoots Cottage, Matfield, Kent; George Stone, 42 Commercial Road, Paddock Wood, Kent.

Stanley M. Harrocks and Sons, Ltd., 1 Nairn Road, Talbot Wood, Bournemouth. Builders. £250. Directors: George S. M. Harrocks and Mrs. B. M. Harrocks, 1 Nairn Road, Bournemouth; Robt. G. Williams, 6 Trystworthy, St. Stephens Road, Bournemouth.

Deakins Bros. (Portsmouth), Ltd., 158 Guildford Road, Fratton, Portsmouth. Builders. £2,000. Directors: Edward A. Deakins, 158 Guildford Road, Fratton, Portsmouth; Reginald Deakins, 26 Merton Crescent, Portchester; Hilda M. Deakins and Gladys M. Deakins.

J. G. Beven and Sons, Ltd., 92 Bensham Lane, Thornton Heath, Surrey, builders. £2,000. Directors: Mrs. Amy Bevan, 92 Bensham Lane, Thornton Heath; John H. Beven, 22 Constance Road, Thornton Heath; Leonard G. Beven, 17 The Holt, Wallington, Surrey.

Cyprus Building and Road Construction Co. (United Kingdom), Ltd. £100,000. Directors to be appointed by subscribers. Subscribers: Cyprus Building and Road Construction Corporation, Ltd.; Evagoras C. Lanitis, George V Street, Limassol, Cyprus. Registered solicitors: Stoneham and Sons, 108a Cannon Street, E.C.4.

D. Mackinnon (Aldershot), Ltd., Edress Works, St. Michaels Road, Aldershot, Hants. Builders. £1,000. Directors: Donald Mackinnon and Mrs. Mavis E. Mackinnon, 5 The Green, Badshot Lea, Farnham, Surrey; Edward R. Maidment, 35 Highland Road, Aldershot.

G. E. Holdford, Ltd., 171 High Street, Hounslow, Middx. builders. £2,000. Directors: Geo. E. Holdford and Louisa M. A. Holdford, 199 Norwood Road, Southall.

Coastal Plant Hire, Ltd., 9 Duckingpool Lane, Marton, Blackpool. £1,000. Directors: Ernest O'Connor, 83 Worcester Road, Blackpool; Thomas O'Connor, 40 Acregate, Blackpool; Leonard Dolan, 20 Selby Avenue, Blackpool.

Chorlton and Dalglish, Ltd., 19 Plough Road, West Ewell, Surrey, builders. £1,000. Directors: Edward B. Chorlton, 19 Plough Road, West Ewell; Timothy B. Dalglish, 9 Alsom Avenue, Worcester Park; Ralph Dalglish, 382 Chessington Road, West Ewell.

R. C. White (Builders), Ltd., Famaona, Barton Road, Wanscombe, Som. £4,000. Directors: Robert C. White and Mrs. L. E. White, Famaona, Barton Road, Wanscombe.

West Bank Builders, Ltd., 18 The Albany, Old Hall Street, Liverpool, 3. £100. Abraham D. Abrahamson, 18 The Albany, Old Hall Street, Liverpool, signs as director.

## COMPANY RESULTS

Stothert and Pitt, Ltd.—Group profit for year ended June 30, 1960, £1,008,328 (£911,060). Net profit £530,828 (£498,860). Final dividend 15 per cent., making 20 per cent. (same).

Tilbury Contracting and Dredging Co., Ltd.—Consolidated net profit for year ended March 31, 1960, £111,807 (£114,523). Final dividend 9 per cent. as forecast on capital doubled by scrip issue making a total equivalent of 11½ per cent. (10 per cent.).

Crowley Russell and Co., Ltd.—Trading profit for year ended March 31, 1960, £92,865 (£85,943). Net profit £40,198 (£34,392). Dividend 5 per cent. 10 per cent.).

David Brown Corporation.—Consolidated profits for the year ended June 30, 1960, £756,492 (£167,598). Net profit after tax, etc., £42,309 (£12,592). No Ordinary dividend.

R. A. Lister and Co., Ltd.—Profits for the year ended September 30, 1960, £1,270,334 (£1,183,343), before tax of £638,948 (£595,880). Ordinary dividend 14 per cent. (same).

Aveling-Barford, Ltd.—Group profits for year ended Sept. 30, 1960, £728,333 (£489,937). Net profit after tax etc., £370,631 (£203,848). Ordinary dividend 20 per cent. (12½ per cent.).

A.C.V., Ltd.—Group profits for the year ended Sept. 30, 1960, £1,512,935 (£966,115). Net profit after tax, etc., £783,357 (£538,238). Ordinary dividend 22½ per cent. A rights issue of 30s. per £1 share is also proposed.

Broom and Wade, Ltd.—Group profits for the year ended Sept. 30, 1960, £1,044,922 (£851,858). Net profit after tax, etc., £449,140 (£374,163). Recommended final ordinary dividend 17½ per cent., making a total of 22½ per cent. for the year.

## NORTHLIGHT PRECAST CONCRETE BUILDING

LATEST addition to the Cranley system of precast, reinforced concrete buildings is a northlight building, providing even natural lighting for factories and drawing offices.

This application of the Cranley system enables northlight spans from 30ft. to 40ft., and any length and any number to be built with a lower-end eaves height of 8ft. to 18ft. below a reinforced concrete gutter. The bay centres internally and externally are normally 15ft. apart, but they may be modified to suit special requirements, including the siting of special, large plant and production lines.

The roof is supported between stanchions by reinforced concrete purlins, which support an asbestos concrete roof or other roof finish, such as aluminium or stramit, lined with insulation board. The northlight itself, at right angles to the roof surface, is of patent glazing.

Infilling of the bay ends, front and back of the building, is of patent wall panels, 5½in. thick, comprising two lin. skins of dense, vibrated, waterproof concrete with 3½in. vermiculite concrete infilling giving good insulation. The external finish is of exposed aggregate.

Cranley buildings are manufactured by F. and D. M. Hewitt, Ltd., Vine Works, Elmbridge, Cranleigh, Surrey.

## SPECIAL 1½IN. INSULATION BOARD

A special board, 1½in. thick, has been manufactured by Powell Duffryn Industries, Ltd., 8 Great Tower Street, London, E.C.3, for what is believed to be the first time in this country.

The board, which is a Trerock flame retardant type with a white surface in a 2ft. width, was made at the firm's Queensferry Mill, for the roof of a new factory under construction at Stourbridge. A thermal insulation co-efficient down to 0.16 was demanded in the design, which could be achieved with the use of 1½in.-thick insulation board in the roof lining.

Harper and Spring, Cradley Heath, are the architects for the factory, which is for Birmingham Sound Reproducers, Ltd. The roofing contractors are Normans (Wolverhampton), Ltd.

## LOADER ATTACHMENT FOR KWIK-MIX HI-LIFTER

A front end loader attachment with a 1½ cu. yd. capacity is now available for the Hi-Lifter, made by the Kwik-Mix Co., Port Washington, Wisconsin, a division of Koehring Co.

The new attachment digs 94in. wide, has an 8½ft. dumping height, 40-degree roll back at ground level, 50-degree at dumping height, and a 9,000lb. breakout force. The maximum lifting capacity is 8,500lb., the entire front end operating mechanism pivoting ahead of the operator.

Features of the basic Hi-Lifter include: Four-wheel drive traction, with kick-out to two-wheel drive for road use, four-wheel power brakes, 18-m.p.h. in either direction, power steering and hydraulic controls.

## NEW SAFETY GLASSES

Industrial glasses with an unbreakable nylon frame which returns to shape after being bent or twisted are now being marketed by Safety Service Co., Ltd., ITEX House, Wendover Road, London, N.W.10.

These ITEX Flexispecs weigh only 1 oz., and are fitted with replaceable curved shatterproof lenses, and clear nylon side-shields. They will fit over all types of ordinary spectacles.



Pictured here is the first eight-wheel concrete mixer to be built by Fodens, Ltd., in collaboration with Ready Mixed Concrete, Ltd. It is fitted with a 150 b.h.p. Foden engine, and has a five-speed gearbox, double drive bogie and fibre glass cab. The gross vehicle weight is 24 tons. This machine is fitted with a Ransomes and Rapier 8 cu. yd. drum and is suitable for either mixing or agitating all types of concrete, either wet or dry. Two-way radio is fitted for driver to base communication



# Current Constructional Activities

## PROJECTS • CONTRACTS • AWARDS

**THIS** editorial feature provides readers with a comprehensive news service covering forthcoming private and public construction work. Commencing on this page information is given concerning future projects followed by details of tenders being invited. In the third section will be found news of tenders recommended for acceptance, tenders accepted and contracts awarded. Attention is also drawn to the advertisements covering contracts and appointments appearing in the front part of the *Journal*.

### BUILDING AND DECORATING (See also Housing Schemes)

**Ashton-under-Lyne, Lancs.**—C.C. have approved site of Stockport Road, at the junction of John Street and Cambridge Street, for new ambulance station.

**Battersea, B.C.** have appointed Emberton, Franck and Tardew, 17 Chantry House, Eccleston Street, London, S.W.1, as the architects, W. C. Inman and Partners, 7 New Square, W.C.2, as the quantity surveyors, W. V. Zinn and Partners, Collingham House, Eagle Street, W.C.1, as the consulting engineers, and J. E. Greatorex and Partners, 15 Berners Street, W.1, as the heating and ventilating engineers, for development of Southlands with 134 dwellings, civil buildings, library, public wash-houses and hall.

**Beddington and Wallington, Surrey.**—B.C. recommended to approve in principle reports on the erection of a new building to replace the former Grange Mansion and appoint Vincent Burr and Partners, 85 Gower Street, London, W.C.1, as architects for scheme. Estimated cost £81,725.

**Bermondsey, B.C.** recommended to approve appointment of F. S. Snow and Partners, 144 Southwark Street, London, S.E.1, as the consulting engineers, and W. G. Edwards and A. Avery Hall, 75 Blackfriars Road, London, S.E.1, as the quantity surveyors, for alterations to entrance hall of the central baths.

**Birmingham.**—J. Seymour Harris and Partners, 3-4 Greenfield Crescent, Edgbaston, are the architects for the erection of a 10-storey office block to be known as Auchinleck House at Five Ways, Edgbaston, for the Murrayfield Real Estate Co., Ltd.

**Bradford, Yorks.**—City Council recommended to prepare scheme for the modernisation of dwellings in the Longlands area.

**Bridlington, Yorks.**—B.C. to prepare sketch layout plan for provision of a crematorium on the north-west side of the Driffield to Bridlington road near Bessingby Lodge.

**Bristol.**—Courtauld's Technical Services, Ltd., Foleshill Road, Coventry, are the consultants for the erection of the new School of Chemistry at Woodland Road/University Walk, for the University of Bristol. Site works contract to be placed early this month and the main building contract in July. Estimated cost £1,780,000.

**Burnley, Lancs.**—Michelin Tyre Co., Ltd., to carry out a 60,000 sq. ft. extension on their 53 acre site at Heasand Ford.

**Carlisle, Cumb.**—City Council have approved sketch plans for the erection of the youth and community centre at Harraby.

Shop extensions to provide offices between Botchergate and Collier Lane, for Carlisle South-end Co-op Society, Ltd. Plans by the C.W.S. Architects' Department, 90 Westmorland Road, Newcastle upon Tyne.

**Chatham, Kent.**—B.C. recommended to prepare detailed plans and bills of quantities for the erection of an old people's home at King George Road, Weeds Wood Estate.

B.C. recommended to approve plans for the erection of additional accommodation, phase 2, at Medway College, of Technology and additional classroom accommodation and extensions to the kitchen at Wayfield County Primary Junior School, for C.C.

**Chichester, Sussex.**—Ministry have approved City Council's proposal for the clearance and rebuilding of the Somerstown area. Plans prepared by Sir Hugh Casson and Neville Corder, architects, 35 Thurlow Place, London, S.W.7.

**Croydon, Surrey.**—B.C. recommended to approve final plans and apply for sanction to borrow £75,600 for extensions and adaptations at Portland Secondary Mixed School, Sandown Road, South Norwood.

B.C. recommended to grant planning permission, subject to conditions, for erection of office block at Wellesley Road/Walpole Road, for Newman, Levinson and Partners, 9 Mansfield Street, London, W.1; office block and poster store at 143-153 Whitehorse Road, for Alexander Scotts, Ltd. (Alexander Scotts Properties, Ltd.), 19 Tamworth Road; office block at 3 Lansdowne Road, for Halsack Investments, Ltd., c/o E. Roy Moore, 16 Berkeley Street, London, W.1; demolition of existing building and erection on site of offices with car parking facilities at 7 Lansdowne Road, for Young Women's Christian Association, Y.W.C.A. Central Buildings, Great Russell Street, London, W.C.1; erection of hall and workroom for disabled persons at r/o 78 Thornton Road, for The Croydon Guild of Social Services, 2 Lansdowne Road.

B.C. have approved plans for erection of offices and warehouse at 616-618 Mitcham Road, for Ronald Lyon (Estates) Co., Ltd., Lyon House, Lyon Road, Hersham.

**Durham.**—Extensions are proposed to Bede College at a cost of £30,000 and funds are being raised. The architects are Cordingley and McIntyre, Owengate, Durham City.

City Council have invited Tarren and Caller, architects, 16 Great North Road, Newcastle upon Tyne to submit plans for housing developments at Crossgate.

**Eastbourne, Sussex.**—B.C. recommended to invite tenders from selected contractors for the provision of revolving doors and screens, and asphalt tanking and roofings at the new Central Public Library and Municipal Offices.

**Farnborough, Kent.**—Bromley Group Hospital Management Committee have approved scheme for the erection of a social centre at Farnborough Hospital. Estimated cost £12,000.

**Gosforth, Northumb.**—U.D.C. considering a long-term scheme for the redevelopment of the High Street area of the town, involving the demolition of many shops and houses and the erection of new ones.

**Hackney, B.C.** recommended to approve proposals for provision of a branch library on the corner of Victoria Park Road and Redruth Road. Estimated cost £20,280.

**Hendon, Middx.**—B.C. recommended, subject to Ministry approval and planning permission, to invite tenders for the provision of a canteen building at the market, estimated cost £1,250; approve scheme for the installation of new surrounds and grates in dwellings at the Hyde estate, £3,000.

**Hexham, Northumb.**—Hadrian Supply Co., Ltd., Norham Road, North Shields, have bought premises in Fore Street for conversion into a grocery supermarket.

**High Wycombe, Bucks.**—B.C. recommended to approve plans for the provision of a mess room at the Cemetery. Estimated cost £1,450.

**Hull.**—City Council to apply for sanction to borrow £451,631 for first stage of new central abattoir.

University propose extensions. Estimated to cost £3m. during the next five years.

**Huyton-with-Roby, Lancs.**—U.D.C. have selected scheme submitted by Chapman Taylor Partners, architects, 625 Grand Buildings, Trafalgar Square, London, W.C.2, for redevelopment of the town centre for Greencoat properties, for submission to the Ministry. Scheme provides for pedestrian precinct around which would be grouped about 30 shops of varying sizes and a small office block. Above some of the shops would be 16 maisonnettes. There would also be parking facilities and a petrol-filling station. Estimated cost £250,000.

**Kingston-upon-Thames, Surrey.**—B.C. recommended to approve remedial works in asphalt to flat roofs (in two stages during 1961/62) at the council offices. Estimated cost £1,500.

**Leeds.**—City Council have approved the appointment of Holmes and Walker, 16 Blenheim Terrace, Woodhouse Lane, Leeds, 2, quantity surveyors for the erection of new remand home on the south side of Skelton Lane, Whinmoor.

**Littlehampton, Sussex.**—U.D.C. to invite tenders for the provision of 20 beach huts.

**Maidenhead, Berks.**—B.C. recommended to approve detailed plans prepared by Sir John Hubert Worthington, consultant architect, 178 Oxford Road, Manchester, and Guy Wood North, architect, 40 Broadway, Maidenhead, for the small hall, mayor's reception and ante room of the new municipal buildings.

**Mansfield, Notts.**—B.C. recommended to approve for inclusion in 1961-62 programme, scheme for the completion of the second phase of extensions to the bowls pavilion at Titchfield Park, estimated cost £1,875; approve in principle scheme for the construction of a multi-storey car park on land between Stockwell Gate and Rooth Street.

**Margate, Kent.**—B.C. recommended, subject to Ministry approval, to invite tenders for the supply and erection of 14 garages between 75 and 81 Arlington Gardens, 17 at Addiscombe Road estate, and nine at Hundreds Farm estate. Estimated cost £2,400, £1,150 and £700, respectively.

**New Romney, Kent.**—B.C. recommended to prepare scheme for repairs to the assembly rooms.

**Plymouth.**—City Council recommended to approve plans and apply for sanction to borrow £63,366 for the erection of proposed new primary school at Charlotte Street, Devonport; prepare scheme for the Princess Square layout in the Civic Centre; apply for planning permission to erect an extension to factory at Whiteleigh, for C. and J. Clark, Ltd., estimated cost £25,000; prepare sketch plans for the construction of an indoor swimming pool near the Home Park car park within Central Park, £220,000.

City Council recommended to approve plans for the erection of petrol filling station, repair garage, showrooms and ancillary accommodation at Worsley Road, St. Budeaux, for Frank Chapman (Plymouth), Ltd., Lipson Vale Garage, Plymouth.

**Preston, Lancs.**—B.C. have approved the erection of a new office block on a site dominating Miller Park, for the C.C.

**Rugby, War.**—B.C. recommended to approve in principle and submit to Ministry for approval, scheme for a new highways depot at Hunters Lane. Estimated cost £108,000.

**St. Albans, Herts.**—City Council recommended to approve plans for the erection of a nurses' hostel at St. Albans City Hospital, for the North West Metropolitan Regional Hospital Board; rebuilding and extension of existing store at 19-21 St. Peter's Street, for Marks and Spencer, Ltd.

**Salford, Lancs.**—City Council have approved planning permission for the rebuilding of licensed premises, Queens Arms, Regent Road, Wilburn Street, for Chester's Brewery Co., 23 Princess Street, Manchester, 12.

**Seaham, Dur.**—Plans are being considered for the erection of a British Legion Club and flat at Wells Crescent. The architect is C. L. Heslop, Upper Church Street, West Hartlepool.

**Shrewsbury, Salop.**—B.C. recommended to approve plans for a new swimming bath and improvements to the existing baths. Estimated cost £173,000.

**Skegness, Lincs.**—U.D.C. recommended to approve scheme for new trading kiosks on Tower Esplanade, miniature railway station and shelter and information centre, during 1961-62. Estimated cost £14,100.

**Skelton-in-Cleveland, Yorks.**—North Riding C.C. recommended to approve provision of a family group children's home. Estimated cost £6,285.

**Skipton, Yorks.**—R.D.C. conditional planning permission granted for a proposed warehouse and block of garages at Aireside Mills, Cononley, for Thomas Stoll and Co., Ltd.

**Southall, Middx.**—B.C. recommended to invite tenders from selected contractors for conversion and repointing work, etc., at Crosby House.

**Southampton.**—B.C. recommended to apply for sanction to borrow £4,890 for the erection of public conveniences at East Street.

**South Shields, Dur.**—B.C. to erect 10 shops and flats in the Mile End Road area at a cost of £52,500 and work will start during 1961. It is not known yet whether the work will be done by direct labour or contract.

**Spenborough, Yorks.**—B.C. have approved the erection of additional classrooms at Birkenshaw Secondary School and Cleckheaton Secondary School.

**Staines, Middx.**—C.C. recommended to approve the erection of a fire station at Town Lane. Estimated cost £59,485.

**Stammore, Middx.**—C.C. recommended to approve the provision of additional accommodation and extensions at Stammore Residential Nursery. Estimated cost £4,800.

**Stockton-on-Tees, Dur.**—Corporation Plans and Town Planning Committee have approved

outline application for a church hall and vicarage in Bishopton Road West, for the C. of E. Vicar-Canon C. N. Wardle-Harper.

**Stoke-on-Trent, Staffs.**—B.C. recommended to approve scheme for improving the existing kitchen at Victoria Hall, estimated cost £3,750; apply for sanction to borrow £208,578 for an instalment of Holden Lane County Secondary School, £33,463 for extensions at Burnwood County Secondary School and £19,973 for additional accommodation at Cicely Haughton Special School.

**Stoke-on-Trent, Staffs.**—City Council recommended to prepare design for a pavilion on site adjoining Bentilee Junior School, Bucknall.

**Stourbridge, Worcs.**—B.C. recommended to invite tenders during 1961-62 for repainting 534 houses at Rufford, High Park, Hodge Hill, Wollaston Farm and Norton estates; approve in principle scheme for the extension of the Council House offices.

**Tadcaster, Yorks.**—John Smith's (Tadcaster) Brewery Co., Ltd., propose new office block.

**Tonbridge, Kent.**—U.D.C. are considering schemes for the provision of changing accommodation with showers, estimated cost £2,320; public cinder track and a covered pool.

**Twickenham, Middx.**—C.C. recommended to approve the erection of partitioning and other works, including alterations to the lighting, the provision of a ramp and shelving and consequential redecorations, to provide three offices, etc., at 13 Rosslyn Road. Estimated cost £1,800.

**Tynemouth, Northumb.**—B.C. considering the erection of a permanent health centre at the rear of Cleveland Villa Nursery at a cost of £4,800; plans approved for new £10,000 headquarters at Billy Mill Lane, North Shields, for Tynemouth Squash Racket Club, 14 Bath Terrace. The club have prepared their own plans, but no building contracts have been let; Auto Services, Ltd., John Street, Cullercoats, are to redevelop their filling station, etc.; M. J. Liddell and Sons, 36 Great North Road, Newcastle upon Tyne who are to erect a 100-bedroom hotel on the Grand Parade site, expect to complete the first stage of the work within 21 months, and the whole project in four years. The firm have announced that it will be nine months before detailed plans for the scheme are completed.

**Ulverston, Lancs.**—County Planning and Development Committee have approved plans for the erection of an infant and junior school on the Croftlands Park estate.

U.D.C. have approved outline planning application in principle for two-storey factory extension at Priory Park, for Oxley Development Co., Ltd.

**Walthamstow, Essex.**—B.C. recommended to approve scheme for the demolition of 7-9 Handsworth Avenue, and erection of temporary garages; revised layout plans for 36 garages at the Garage Court, Vincent Road; to proceed with the preparation of scheme for the erection of Wadham Bridge Community Centre; appoint Clark and Gearing, 16 Dominion Street, London, E.C.2, as quantity surveyors for the erection of Roger Ascham Junior Mixed School and Edinburgh Junior Mixed School.

**Wandsworth, B.C.** recommended to approve designs for a three-storey block of flats at Glegg Place site, and to appoint Flint and Neill, Abford House, 15 Wilton Road, London, S.W.1, as the structural consultants.

**Wath-on-Deane, Yorks.**—John Smith's (Tadcaster) Brewery Co., Ltd., propose erection of new mineral water factory.

**Wembley, Middx.**—C.C. recommended to approve the formation of a drawing office at Wembley Tyler's Croft Secondary Boys School. Estimated cost £1,750.

**Westmorland.**—M.E. have approved C.C.'s proposal to erect a comprehensive school at Calgarth, near Windermere. Estimated cost £200,000.

**Willesden, Middx.**—B.C. recommended to approve plans for erection of a new mess room at the rick yard at Gladstone Park, estimated cost £2,500; scheme for initial repairs and adaptations at 54 Chichester Road, £1,001.

B.C. recommended to invite tenders for the renewal of roof at Dover Court.

**Willesden, Middx.**—C.C. recommended to approve scheme for adaptations and improvements at 43-47 Dudden Hill Lane. Estimated cost £7,000.

**Windsor, Berks.**—North-west Metropolitan Regional Hospital Board have approved schemes for the erection of a casualty and out-patients block at King Edward VII Hospital, estimated cost £100,000; demolition of prefabricated paediatric building and construction of a new department at the Old Windsor Hospital, £5,000.

#### DEMOLITION

**Margate, Kent.**—B.C. recommended to proceed with the completion of the demolition of 5, 7 and 9 St. John's Road and erection of fencing around site. Estimated cost £146.

#### ELECTRICAL

**Bradford, Yorks.**—City Council recommended to invite tenders from specialist contractors for rewiring Town Hall. Estimated cost £28,000.

**Eastbourne, Sussex.**—B.C. recommended to invite tenders from selected contractors for electrical installations and the provision of lifts at the new Central Public Library and Municipal Offices.

**Huddersfield, Yorks.**—B.C. have approved proposed extension of the trolleybus route from Moldgreen to the Black Horse, Dalton. Estimated cost £13,000.

#### FENCING

**Croydon, Surrey.**—B.C. recommended to approve scheme for replacing fencing at Beulah Hill Pond, Upper Norwood. Estimated cost £1,506.

#### GAS AND WATER SUPPLY

**Abram, Lancs.**—U.D.C. have applied for sanction to borrow £857 for laying of water mains on the Willow Lodge site.

**Mansfield, Notts.**—B.C. recommended to apply for sanction to borrow £4,000 and £1,800, respectively for laying water main extensions at Lichfield Lane and Oak Tree Lane.

**Norham and Islandshires, Northumb.**—Ministry have approved scheme for supplying water to Haggerston, for R.D.C. Estimated cost £12,500.

**Rugby, War.**—B.C. recommended to apply for sanction to borrow £15,000 for laying distribution mains.

**Southampton.**—B.C. recommended to apply for sanction to borrow £12,000 for the provision of a pumping station at Mount Pleasant and £5,000 for tapping water mains; for permission to invite tenders from selected contractors for sinking three trial boreholes at Twyford pumping station.

**Startforth, Yorks.**—R.D.C. to ask Tees Valley and Cleveland Water Board to prepare a water supply scheme for augmenting the supplies to Mickleton, Romaldkirk, and a portion of Citherstone, and to give an estimated cost of laying a supply to the farms and other properties in the vicinity of Mickleton Mill.

#### HARBOURS, PIERS AND SEA DEFENCE WORKS

**Billingham-on-Tees, Dur.**—T. F. Burns and Partners, 3 Ellison Place, Newcastle upon Tyne, are the consulting engineers for a £500,000 extension scheme proposed by the Furness Shipbuilding Co., Ltd., Haverton Hill-on-Tees.

**Whitby, Yorks.**—R.D.C. Surveyor to prepare plans for additional works to the sea wall at Robin Hoods Bay.

#### HEATING AND VENTILATING

**Bradford, Yorks.**—City Council recommended to apply for sanction to borrow £41,200 for modifications to coke-fired boilers at various schools.

**Eastbourne, Sussex.**—B.C. recommended to invite tenders from selected contractors for the installation of heating and hot water at the new Central Public Library and Municipal Offices.

**Rugby, War.**—B.C. recommended, subject to Ministry approval, to appoint Hoare Lea and Partners, 23 St. James Road, Calthorpe, Birmingham, as heating consultants, for the new highway depot at Hunters Lane.

#### HOUSING SCHEMES

**Ashton-in-Makerfield, Lancs.**—U.D.C. to prepare scheme for erection of single-storey flatlets for old people.

**Beverley, Yorks.**—R.D.C. have approved the erection of 44 houses at Newbald, Bishop Burton, Woodmansey and Welton, and eight one-bedroom flats at Wakington.

**Boldon, Dur.**—Peel and Clouston, Hills Yard, Tyne Dock, South Shields, are seeking permission to erect 12 houses in Woodland Road.

**Croydon, Surrey.**—B.C. recommended to grant planning permission, subject to conditions, for erection of 135 flats and 10 houses and construction of a new street at 28 Bramley Hill, Waldronhyrst Hotel and 36 Bramley Hill, for Lawdon Partners, Ltd., 157 Victoria Street, London, S.W.1.

**Dover, Kent.**—B.C. recommended to invite tenders, subject to C.C. approval, for the erection of three two-storey dwellings for aged persons at the junction of Goschen Road and Noah's Ark Road, Tower Hamlets.

**Eastbourne, Sussex.**—B.C. recommended to appoint Martin and Martin, quantity surveyors, 5 Hyde Gardens, Eastbourne, to prepare bills of quantities for 38 flats at the rear of Binsted Close and Faygate Road.

**Godalming, Surrey.**—B.C. recommended to proceed with preparation of plans for 48 flats at Green Lane site.

**Gosforth, Northumb.**—A. Craigie and Sons, 20 West Road, Newcastle upon Tyne, are seeking permission from the planning authorities to erect one block of 24 flats, six storeys high, at The Grove.

**Grange, Lancs.**—U.D.C. have approved plans for erection of eight one-bedroom flats for old people at Kents Bank Road.

**Great Harwood, Lancs.**—U.D.C. preparing preliminary plans for a block of 24 old people's flatlets to be erected in Harwood Lane.

**Greenwich, B.C.** recommended to appoint Davis, Belfield and Everest, 9 Ashley Place, London, S.W.1, as the quantity surveyors for housing scheme at Vanbrugh Park.

**Hackney, B.C.** recommended to approve development of Parkside Estate extension site by erection of 10 maisonnettes and four lock-up garages, and development of Amhurst Park (No. 2) site by erection of 29 flats. Estimated costs £34,500 and £86,500, respectively.

**Ilford, Essex.**—B.C. recommended to appoint W. W. Green and Partners, 396 Seven Sisters Road, London, N.4, as quantity surveyors for the conversion of 59 Eastwood Road.

Town Planning Committee have approved, subject to conditions, outline application for a nine-storey block of 36 flats with 31 garages and seven parking spaces at Redbridge Lane East, adjacent to Redbridge Station for Hilbery Chaplin and Co., 135 South Street, Romford.

**Knaresborough, Yorks.**—U.D.C. recommended to prepare plans for erection of 36 two-storey flats on three sites.

**Mansfield, Notts.**—B.C. recommended to approve amended layout plans for the development of Racecourse housing estate at the junction of Smith Street and Malby Road, comprising five flats and a communal room for aged persons in one three-storey block.

B.C. recommended to approve scheme for 37 houses, 39 bungalows and 76 garages at Oak Tree Lane estate for Geo. Wimpey and Co., Ltd., Hammersmith Grove, London, W.6.

**Margate, Kent.**—B.C. recommended to approve, in principle, layout plans for stage II development of Millmead Road housing site, comprising 281 units of accommodation; to prepare layout plans for eight one-bedroom flats at St. Anne's Gardens.

**Plymouth.**—City Council recommended to approve sketch plans for the erection of four flats and four shops at junction of Uxbridge Drive and Hornchurch Road.

**Redcar, Yorks.**—B.C. planning the erection of 270 aged people's bungalows during the next two years.

**Rugby, War.**—B.C. recommended to approve plans for use of land for erection of three-storey block of 24 flats and garages, Hillmorton Road (between 307 Hillmorton Road and Kingsley Avenue) for W. A. Blackburn, Ltd., Stone House, Willenhall, Coventry.

**St. Albans, Herts.**—City Council recommended to approve plans for the erection of 20 flats and garages at Mount Pleasant/Kings Road/Branch Road, for Fisher Knight and Co., Ltd., Lattimore Road, St. Albans.

**Saddleworth, Yorks.**—Ministry have approved U.D.C.'s plan to build an old people's bungalow estate at Wade Row, Uppermill. Estimated cost £25,000.

**Sheffield.**—Corporation Town Planning Committee have given site permission to Bestall and Marrison, builders, 314 Walkley Bank Road, and Alan Pennington, architect, Collegiate Crescent, for the erection of 15-storey flats, with two satellite blocks each of four storeys, in Hangingwater Road. Estimated cost £300,000 to £400,000.

**Southgate, Middx.**—B.C. recommended to appoint the following architects in connection with housing projects: David du R. Aberdeen and Partners, 19 Southampton Place, London, W.C.1, for Bowes Road, N.11 (Inverforth land) scheme; W. W. Fisk and S. H. Fisk, 6a Bedford Square, London, W.C.1, for 75/77 Avenue Road, N.14; C. E. Owen Ward, 1a Aldermans Hill, London, N.13, for Winchmore Hill Road, N.14; and Vine and Vine, 12 Tudor Chambers, Station Road, N.22, for the Ivy Road, N.14, scheme.

**Stockton-on-Tees, Dur.**—Corporation Plans and Town Planning Committee have approved outline application for layout of housing development on about 13 acres of land west of Lonesome Hall Farm estate, adjacent to the new Stockton Grammar School site, Fairfield, for Moorhouse and Barker, Ltd., Thornaby.

**Stoke Newington.**—B.C. recommended to approve early invitation of tenders for erection of eight two-bedroom and eight three-bedroom flats at 184-192 Green Lanes.

**Sutton and Cheam, Surrey.**—B.C. recommended to prepare scheme for the development of site of South Eastern Gas Board's premises.



**Walthamstow, Essex.**—B.C. recommended to approve schemes for a five-storey block of eight flats and 30 maisonnettes and 18 houses, eight bungalows and 59 garages in the Rosslyn Road and Evelyn Road area; four three-storey houses with garages at College Place; two flats and two garages at 108-112 Belgrave Road; 344 houses at 15 various sites during 1961; revised scheme for the conversion of 27 Castle Avenue to two flats and one maisonnette.

**Wandsworth.**—B.C. recommended to approve designs for blocks of dwellings forming phase 5 in the development of William Willison estate; also recommended to approve revised layout for redevelopment of Hazelhurst Road area.

**Whickham, Dur.**—F. M. Willers, Ltd., 49 Grange Road, Darlington, are seeking permission to erect 18 houses at Church Street, to plans by Fennell and Baddiley, Bridge End Chambers, Chester-le-Street.

**Whitley Bay, Northumb.**—B.C. considering the erection of old people's flats at Seatonville.

**Willenden, Middx.**—B.C. recommended to prepare bills of quantities for 142 dwellings on cinema site at South Kilburn.

#### PLAYING FIELDS, PARKS, ETC.

**Barking, Essex.**—B.C. propose scheme for the provision of a miniature golf course at Mayesbrook Park. Estimated cost £3,800.

**Burnley, Lancs.**—B.C. recommended to approve revised estimates of £5,250 for development of playing fields on land at Sycamore Avenue.

**Mitcham, Surrey.**—B.C. recommended to approve layout of stage 2 of development scheme for the Canons comprising the grassing of the allotment area, paths, tree planting, a children's playground and tennis courts. Estimated cost £8,800.

**Southampton.**—B.C. recommended to approve sketch plans for the layout of Redbridge detached playing field. Estimated cost £17,169.

**Stoke-on-Trent, Staffs.**—City Council recommended to approve scheme for provision of bowling green, tennis courts and children's playground on land adjoining Bentilee Junior School, Bucknall.

**Warton, Lancs.**—Parish Council have approved playingfield scheme. Estimated cost £2,000.

**Woolwich.**—B.C. recommended to approve a scheme for provision of a bowling green and pavilion at Bostall Gardens, at an estimated cost of £9,000, and to invite tenders for the bowling green.

#### ROADS, BRIDGES AND SITE WORKS

**Ashton-in-Makerfield, Lancs.**—U.D.C. to replace grass verges in Lilac Avenue and Elm Avenue, with tarmac. Estimated cost £2,000.

**U.D.C.** to apply for sanction to borrow £17,104 for roads and sewers on the second stage development of the low Bank Road housing estate.

**Barking, Essex.**—B.C. have submitted to C.C. for approval alternative schemes for the construction of an overbridge in Ripple Road at the existing level crossing. Estimated cost £400,000 to £520,000.

**Blyth, Northumb.**—B.C. recommended to approve plans for extending car parks on Blyth Links. Estimated cost £6,500.

**Bradford, Yorks.**—City Council recommended to proceed with street works at Canford Drive (part), Canford Grove, Lyndhurst Grove, Westlands Drive (part) and Westlands Grove. Estimated cost £3,025.

**Chatham, Kent.**—B.C. recommended to invite tenders for surface paving and resurfacing Dock Road (part), Waghorn Street, King Street, Chamberlain Road, Dale Street and Dale End; making-up of Brake Avenue.

**Cheltenham, Glos.**—B.C. recommended to approve scheme for the construction of an access road and surface water drain to industrial sites at The Runnings estate. Estimated cost £3,750.

**Croydon, Surrey.**—B.C. recommended to apply for sanction to borrow £18,890 for roads and sewers for stage 4 of Shrublands housing estate; £1,950 for surfacing a cul-de-sac off Lower Addiscombe Road, Academy Gardens housing site, as hardstanding for 25 cars.

**B.C.** recommended to approve in principle scheme for improvement works at junction of Cherry Orchard Road, Addiscombe Road and Altyre Road. Estimated cost £193,000.

**Dewsbury, Yorks.**—B.C. have approved in principle improvement scheme to remove the bottle neck for traffic in the Webster Hill area. Estimated cost £250,000.

**Eastbourne, Sussex.**—B.C. recommended to prepare plans for the making-up of St. Leonards Wharf.

**Eastbourne, Sussex.**—E.C. recommended to approve scheme for the development of land east of Port Road, including the construction of a new road. Estimated cost £6,450.

**Godalming, Surrey.**—B.C. recommended to approve 1961-62 road programme comprising the following: Re-laying asphalt on High Street from Sun Corner to foot of Holloway Hill, estimated cost £3,000; widening carriageway at Brighton Road adjoining allotment gardens, £800; provision of new kerbs and reconstruction of carriageway, etc., at Hurtmore Road (part), £6,000; widening Charterhouse Road, £2,500; Bridge Street improvement from Municipal Buildings to the Town Bridge; High Street/Bridge Street/Wharf Street junction improvement.

**Littlehampton, Sussex.**—U.D.C. to proceed, subject to conditions, with the construction of a temporary car park on sites of 15, 16 and 17 River Road.

**Lowestoft, Suffolk.**—B.C. recommended to submit to C.C. for inclusion in the 1961-62 programme the following schemes: B.1130—St. Peter's Street, £8,800; A.1118—Wellington Esplanade, £2,720, class 3—Long Road, Links Close to Stradbroke Road, £9,500; B.1384—Long Road west of Stradbroke Road, £4,950; A.1117—Gorleston Road, widening from Pound Farm to Somerleyton Road, £5,700, class 3—Cotmer Road, widening from Beccles Road to Colville Road, £17,500; B.107—Boston Road, widening, B.1074—Somerleyton Road, widening from 20 Gorleston Road, £11,500; A.146—Waveney Drive, realignment and reconstruction of the carriageway at the Colville House bend, £4,750, class 3—Long Road, widening of south side from Kirkley Run to opposite Homefield Avenue, £2,750, class 3—Long Road, widening of south-east side from Homefield Avenue to Links Close, £8,250; B.1074—Oulton Road, widening north side of Oulton Road between 24 and 42, £750.

**Margate, Kent.**—B.C. recommended to prepare plans for making-up of Tyson Avenue, St. Mary's Avenue and part of Millmead Road, subject to M.T. approval, detailed plans for the improvement of the bridge in St. Mildred's Road, Westgate-on-Sea, and the junction of St. Mildred's Road with Station Road.

**Newbury, Berks.**—B.C. recommended to approve for inclusion in 1961-62 programme scheme for kerbing and construction of footpaths on both sides of Link Road and improvement to junction with St. John's Road.

**Newbury, Berks.**—B.C. recommended to proceed with scheme for improvements to the junction of Speenhamland Lane with London Road. Estimated cost £18,000.

**Ormskirk, Lancs.**—U.D.C. have approved in principle proposals by the Ormskirk and District Hospital Management Committee for the provision of a car-park off Wigan Road, Ormskirk, adjoining the Philip and Elizabeth Wards of the County Hospital. Estimated cost £1,000.

**St. Albans, Herts.**—City Council have submitted to C.C. for inclusion in the 1961-62 programme the following: King Harry Lane—Watford Road to Abbey Avenue, completion of scheme to provide 24ft. carriageway and two 5ft. footpaths, estimated cost £7,000; Camp Road—junction new Ashley Road and Drakes Drive, reforming of junction to stagger Camp Road on Ring Road, £2,755; Folly Lane—Normandy Road to Church Crescent, reconstruct carriageway and north footpath on existing line, £9,537; Victoria Street and Grimston Road—railway bridge to Faulkner Hall, burn off and resurface carriageway, £905; Hatfield Road—Upper Lattimore Road to Beaconsfield Road, new kerb and paving on south side, £1,200; Hatfield Road—junction Beechwood and Beaumont Avenues, reform junction to remove large bellmouth, £1,052; Sandpit Lane—Lemsford Road to Heath Road, burn off and resurface carriageway, £905; King Harry Lane—Abbey Avenue to Bluehouse Hill, provide 24ft. carriageway, one 5ft. footpath and surface water drainage, £33,000; Stanhope Road—junction Granville Road, realign carriageway to smooth out double bend, £1,450; Colney Heath Lane—Hill End Lane to Firwood Avenue, provide kerb and footpath on north side, £850; Grimston Road junction Stanhope Road, reform junction to eliminate sharp corner, £7,100; Folly Lane, improvement of bend by Victoria Playing Field, £1,800.

City Council recommended to proceed with detailed plans for the provision of roads and sewers to serve 2nd stage of Civic Centre development.

**Southall, Middx.**—B.C. recommended to invite tenders for improvement of Norwood Road/Tentelow Lane junction.

**Southampton.**—B.C. recommended to approve and submit to M.T. for approval scheme for raising the level of carriageway of Woodmill Lane and provision of footpath at junction of Woodmill Lane, Manor Farm Road, and revised scheme for improvement at junction of Woodhill Lane, Manor Farm Road and Forest Hills Drive. Estimated cost £17,000 and £3,500, respectively.

**Stoke-on-Trent, Staffs.**—City Council recommended to approve plans for making-up Phillip Street at Fenton, Popular Grove at Blurton, Kenilworth Grove, Warwick Avenue and Eden Grove at Meir; prepare schemes for widening Eaves Lane, Bucknall, at entrance to Bucknall Hospital and length of Grove Road, Fenton, along frontage of Midlands Electricity Board's depot.

**Walthamstow, Essex.**—B.C. recommended to prepare specifications and plans for the making-up of Nicholson Road; approve for inclusion in 1961-62 programme scheme for the making-up of unmade section of Bisterne Avenue; submit to M.T. for approval scheme for widening Blackhorse Road in conjunction with the reconstruction of the bridge over the railway line by the British Transport Commission.

**Wigan, Lancs.**—B.C. recommended to make provision for £44,200 for roads and sewers, children's playground, garage sites and concrete garages on the proposed Giant's Hall estate (subject to Ministry approval).

#### SEWERAGE, SEWAGE AND REFUSE DISPOSAL

**Bexhill-on-Sea, Sussex.**—B.C. have applied for sanction to borrow £15,132 for the construction of overflows at Cooden.

**Daventry, Northants.**—B.C. recommended to apply for sanction to borrow £48,100 and permission to invite tenders for sewerage and sewage disposal works.

**Dover, Kent.**—R.D.C. have applied for sanction to borrow £111,500 for the drainage of Lydden, Coldred and Shepherdwell.

**Ilford, Essex.**—T.C. recommended to approve in principle construction of main drainage scheme, comprising (1) 1961-62—Woodford Avenue, Clayhall Avenue to River Roding, Wilton Road, Ilford Lane and Albert Road and Belgrave Road area, £233,440; (2) 1962-63—Relief Eastern Avenue and Woodford Avenue, Cranbrook Road, Ardwell Avenue and Springfield Drive, Oaks Lane, Brook Road and Suffolk Road, £235,772; (3) 1963-64—Tomswood Hill, Fullwell Cross and Forest Road, Green Lane, Goodmayes Lane and Trenance Gardens, Green Lane, Hazeldene Road, £211,283; (4) 1964-65—Seven Kings water stage II, Barley Lane, Langham Drive, Grove Road, £348,475, and authorise the Borough Engineer to proceed with detailed surveys, designs and preparation of bills of quantities for the soil sewers.

**Lowestoft, Suffolk.**—B.C. recommended to appoint J. D. and D. M. Watson, 67 Tufton Street, Westminster, London, S.W.1. as consulting engineers to advise on the main drainage scheme.

**Richmond, Yorks.**—R.D.C. have approved for submission to the Ministry plans for sewerage schemes for Colburn and Hipswell. Estimated cost £18,790.

**Southampton.**—B.C. recommended to apply for sanction to borrow £14,000 for extension of sewers in Chapel Road, from Grove Street along St. Mary Street and Chapel Street to St. Mary's Place.

**Stokesley, Yorks.**—R.D.C. to carry out off-site sewer works for housing developments on the Spital Farm site, Yarm. The cost will be £5,850 and will be borne by the estate developers, Carpenders Park Estate, Ltd., Watford.

**Walthamstow, Essex.**—B.C. recommended to approve, for inclusion in 1961-62 programme, amended scheme for the construction of a relief surface water sewer in Valognes Avenue to connect with surface water sewer in Folly Lane. Estimated cost £1,400.

**West Lancashire.**—Ward, Ashcroft and Parkman, consulting engineers, 38 The Temple, Dale Street, Liverpool, 3, are preparing drainage scheme for the Moss Road area of Halsall.

#### STREET LIGHTING

**Bradford, Yorks.**—City Council recommended to approve schemes for the conversion of street lighting during 1961-62, in the following areas: Wibsey Carr Bottom, £11,260; Thornton (section I), £3,287; Thackley, £5,420; Idle, £4,230.

**Burnley, Lancs.**—Street Lighting Committee have approved third phase in the electrification of Burnley's street lighting scheme. Estimated cost £17,697.

**Maidenhead, Berks.**—B.C. recommended to approve for inclusion in 1961-62 programme street lighting scheme for Gullet Footpath.

**Plymouth.**—City Council recommended to approve scheme for re-lighting of Fort Austin Avenue, estimated cost £4,000 and stage I, first section of the gas conversion scheme, £3,000.

**Southampton.**—B.C. recommended to approve and submit to M.T. for approval, second stage of scheme for new street lighting in Above Bar Street, and street lighting works for the six dials gyratory scheme. Estimated cost £10,849 and £2,832, respectively.



## CONTRACTS

Full details of the Contracts marked \* will be found in our Advertisement Columns.

### BUILDING AND DECORATING (See also Housing Schemes)

**Abercarn, Mon.**—External repainting of 539 dwellings at various sites throughout the urban district over a period of two years for U.D.C. Documents from the office of the Council's Engineer and Surveyor, Council Offices, Abercarn. Deposit £2 2s. Tenders by Jan. 30.

**Aberdeen.**—Fish Market. Proposed re-roofing of South Market Street and Albert Quay sections, for City Council. Applications in writing to the City Architect, 11 Broad Street, Aberdeen. Tenders by Jan. 13.

**Antrim.**—Extension to Lisburn Technical School (Phase II), Lisburn, for C.C. Documents from W. H. Stephens and Sons, quantity surveyors, 13 Donegall Square North, Belfast. Deposit £5. Tenders by Feb. 10.

**Armagh.**—Supply and erection of structural steelwork at Tandragee County Intermediate School for Co. E.C. Documents from Committee's Architect, 9 Beresford Row, The Mall, Armagh. Deposit £2 2s. Tenders by Jan. 10.

**Audenshaw, Lancs.**—Improvement works to six cottages houses for U.D.C. Documents from the Clerk, Council Offices, Ryecroft Hall, Audenshaw. Tenders by Jan. 14.

**Bangor, Down.**—Supply, fabrication and erection of structural steelwork for a factory at Rathgael, Bangor, for Ministry of Commerce. Documents from Room 28, Chichester House, 64 Chichester Street, Belfast, 1. Tenders by Jan. 11.

**Barrow-in-Furness, Lancs.**—Alterations to Holker County Secondary School for B.C. Documents from J. N. Flitcroft, borough engineer and surveyor, Town Hall, Barrow-in-Furness. Deposit £2 2s. Tenders by Feb. 6.

**Bathavon, Som.**—Erection of public convenience in the Parish of Peasedown St. John, near Bath, for R.D.C. Documents from C. C. Axford, surveyor to the Council, Council Offices, Westgate Buildings, Bath. Tenders by Jan. 31.

**Belfast.**—Erection and completion of three new classrooms at Royal Academy, Cliftonville Road for Board of Governors. Documents from Allan Dorman, chartered architect, 8 Elmwood Avenue, Belfast. Deposit £5. Tenders by Jan. 12.

**Belfast.**—Sub-contract for wood panelling and fittings to courtrooms, etc., at new Petty Sessions Courts, Belfast, for Ministry of Finance. The work comprises the fitting out of four courts (each about 40ft. by 30ft. by 18ft. high), of waiting halls and other ancillary rooms, and includes panelling, benching and acoustic treatment. Written applications giving full particulars of recent works which can be inspected, should be made to The Secretary, Ministry of Finance, Room 131, Law Courts Building, Belfast, 1, by 3 p.m. Jan. 9.

**Boldon, Dur.**—Erection of public conveniences at the old gasworks site, The Bents, Whitburn, for U.D.C. Documents from the office of the Engineer and Surveyor, Council Offices, East Boldon. Tenders by Feb. 7.

**Bournemouth, Hants.**—Erection of a youth club at East Howe Girls' Secondary School for B.C. Documents from the Borough Architect's Office (Room 106), Town Hall, Bournemouth. Deposit £1 1s. Tenders by Jan. 30.

**Brecon.**—Erection of a headmaster's house and junior school hostel in one two-storeyed building of traditional construction with a total floor area of 8,709 sq. ft. at Christ College. Documents from Geo. H. Davies and Hurley, architects, 12 Cross Street, Aberavenny. Deposit £2 2s.

**Bridge-Blean, Kent.**—Construction of 10 garages at Shalmsford Street, Chatham, and 10 garages at Park View, Sturry, for R.D.C. Documents from the Engineer and Surveyor, Council Offices, 41 Old Dover Road, Canterbury. Tenders by Feb. 1.

**Bridport, Dorset.**—Cafe Royal extension for B.C. Applications immediately.

**Cardiff.**—Steelwork for street lighting and weights and measures depot for City Council. Deposit £2 2s. Tenders by Jan. 27.

**Chislehurst and Sidcup, Kent.**—Supply and erection of approximately 3,000yd. super. of beam and hollow pot flooring, together with in situ R.C. staircases and cantilever balconies at Northcote Road housing site—82 dwellings for U.D.C. Applications in writing to Engineer and Surveyor, Manor House, Sidcup, Kent, by Jan. 7.

**Clonakilty, Cork.**—Erection of a new agricultural school at Clonakilty, Co. Cork. Documents from the Secretary, Office of Public Works, 51 St. Stephen's Green, Dublin. Deposit £10. Tenders by Feb. 15.

**Coldstream, Berwicks.**—Outside painterwork of 28 houses in Home Place-Cheviot Terrace and the Town Hall for B.C. Applications to

the Burgh Surveyor, High Street, Coldstream. Tenders by Jan. 13.

**Coseley, Staffs.**—Anchor Road garage workshop: Erection of a steel-framed structure to match the existing garage, approximate size 48ft. by 30ft., together with ancillary works for U.D.C. Documents from Joseph C. Roper, clerk of the Council, Council House, Coseley. Deposit £2 2s. Tenders by Jan. 14.

**Croydon, Surrey.**—Extensions, etc., at Croydon cemetery for B.C. Apply within seven days. Tenders by Feb. 28.

**Darlington, Dur.**—College of further education, phases 2 and 3, for B.C. Deposit £2 2s. Tenders by Feb. 16.

**Daventry, Northants.**—Exterior painting of the under-mentioned works for R.D.C.: (a) Twenty-nine houses at Braunston; (b) 18 houses at Byfield; (c) 10 houses at Whilton; (d) 32 houses at Yelvertoft; (e) 14 dwellings at Badby; (f) 10 dwellings at Braunston; (g) 16 dwellings at Long Buckby; (h) 16 dwelling at Long Buckby. Documents from the Surveyor, Council Offices, Church Walk, Daventry. Tenders by Jan. 30.

**Deben, Suffolk.**—Erection of a stores building and incidental works at Ufford for R.D.C. The building will be approximately 72ft. long by 14ft. 6in. wide in 9in. brickwork, and there will be other incidental work consisting of drainage, short length of concrete access road and builders work in connection with petrol pump installation. Applications to the Engineer and Surveyor, Council Offices, Melton Hill, Woodbridge. Deposit £2 2s. Tenders by Jan. 18.

**Devizes, Wilts.**—Works to provide modern conveniences at eight houses at Stanton St. Bernard, for R.D.C. Documents from the Surveyor, Browfort, Devizes. Tenders by Jan. 21.

**Dover.**—Repair and redecoration of three houses in the Dour Street and Maison Dieu Road area for B.C. Documents from the Borough Engineer, Brook House, Dover. Tenders by Jan. 9.

**Dungannon, Tyrone.**—Following work for R.D.C.: Plumbing contracts—(1) internal plumbing installation in 23 semi-detached houses at Mullaghdroilly, Granville; (2) internal plumbing installation in 8 semi-detached houses at Mullaghtiege, Bush; (3) internal plumbing installation in a single house at Creevelough, Minterburn; (4) internal plumbing installation in a single house at Annaghmakeown, Cionavaddy. Electrical contracts—(1) electrical installation in 23 semi-detached houses at Mullaghdroilly, Granville; (2) electrical installation in 8 semi-detached houses at Mullaghtiege, Bush. Deposit £1 1s. each. Tenders by Jan. 12.

**Durham.**—Following for C.C.: Boldon new branch library, erection; Felling Leam Lane community centre, erection. Applications to County Architect, South Street, Durham, by Jan. 11.

**East Riding.**—Alterations, repairs and painting at the Derwent Hill Residential Establishment, Stamford Bridge, for C.C. Documents from the County Architect, County Hall, Beverley. Tenders by Jan. 16.

**Edinburgh.**—Improvement of second-floor (south tenement) house (principally mason, plaster and plumber work), 406 Easter Road for City Council. Applications to the City Architect, City Chambers, Edinburgh, by Jan. 12. Tenders by Jan. 24.

**Edinburgh.**—Excavator, concrete and brickwork required in the construction of a vehicle wash bay, etc., at Seafeld refuse disposal works for City Council. Documents from the Engineer and Manager, Lighting and Cleansing Department, 329 High Street, Edinburgh. Tenders by Feb. 17.

**Ely, Cambs.**—Provision of bathrooms (including hot water installations, water closets, drainage, etc.), in four houses at Park Close, Coveney, 16 houses at Ely Road, Little Downham, and 16 houses at York Road, Sutton (sewage treatment plant also to be provided on the Coveney and Little Downham estates mentioned) for R.D.C. Documents from the Engineer and Surveyor, Rural Council Offices, 11 Lynn Road, Ely. Deposit £5 5s. Tenders by Feb. 7.

**Enniskillen, Fermanagh.**—Alterations to Ardhowen, Dublin Road, Enniskillen, to form new Council offices, and the construction of a new Council chamber, registry office and other ancillary works for R.D.C. Documents from W. D. R. and R. T. Taggart, architects, 13 College Gardens, Belfast, 9, or Walter Megaw, clerk of the Council, Council Offices, Cornagrade, Enniskillen. Deposit £5 5s. Tenders by Jan. 20.

**Essex.**—Mental Health Service Hostel, Colchester, for C.C. The work will be in traditional construction, estimated cost £22,000. Applications to H. Conolly, county architect, County Hall, Chelmsford, by Jan. 7.

**Folkestone, Kent.**—Following for B.C.: Contract 1 (a)—alterations to kitchen; contract 1 (b)—installation of hot water system including electric water heater and wash-hand

basin; installation of electric power points. The number of houses included in this first stage is 49. Documents from the Borough Engineer, Municipal Offices, Folkestone. Tenders by Jan. 13.

**Gloucestershire.**—Construction of approximately 400 lin. yd. of Cotswold dry stone wall at Troopers Lodge, 34 miles west of Moreton-in-Marsh, for C.C. Application to the County Surveyor, Quay Street, Gloucester. Tenders by Jan. 16.

**Grimby, Lincs.**—Following works required in the remodelling of Edward Street Primary Junior School, for B.C.: (a) General building contract, comprising alterations and extensions to the existing two-storey building, together with drainage and other ancillary works; (b) heating and hot water installations; (c) electrical installations. Documents from the office of J. V. Oldfield, borough engineer and architect, Municipal Offices, Town Hall Square, Grimsby. Deposit £5. Tenders by Jan. 23.

**Hambledon, Surrey.**—Construction of a brick and tile public convenience at Cranleigh car park for R.D.C. Documents from the office of the Engineer and Surveyor, Council Offices, Bury Fields, Guildford. Deposit £2 2s. (cheques payable to R.D.C.). Tenders by Jan. 18.

**Hampshire.**—Erection of seven rescue training sets and ancillary works at Claylands Road, Bishops Waltham, for C.C. Applications to the County Architect, The Castle, Winchester, by Jan. 13. Deposit £1 1s.

**Havant and Waterloo, Hants.**—Erection of a pavilion and store at Emsworth Recreation Ground, Horndean Road, Emsworth, for U.D.C. Documents from the Engineer and Surveyor, 1 Park Road North, Havant. Tenders by Jan. 16.

**Henley, Oxon.**—Exterior painting, certain interior painting and minor repairs, etc., to 165 Council cottages on various sites for R.D.C.: (Group 1) Sonning Common (42); (2) Nuffield (10), Stoke Row (18), Checkendon (51N), Mapledrham (51N); (3) Goring Heath (eight), Goring (29); (4) Shiplake (14), Bix (10), Dunsden (22). Contractors should at the same time signify for which group or groups they wish to tender. Submit names to S. Harrison, clerk to the Council, Easby House, Northfield End, Henley-on-Thames, by Jan. 12.

**Holland.**—Following works for C.C.: (a) One four-bay fire station, drill yard, hose-drying and drill tower, brigade stores and offices, together with six houses to be built on a site at Robin Hood's Walk, Boston; (b) Carlton Road County Junior School, Boston—provision of two classrooms, ancillary accommodation and reorganisation of the heating in the existing school. Documents from the County Architect, County Hall, Boston, Lincs. Tenders by Jan. 30.

**Holland.**—Internal and/or external painting of the following schools for C.C.: Boston Park Junior and Infants; Boston St. Thomas V.C.P.; Deeping St. Nicholas (Tongue End) C.P.; Donington Cowley's Secondary V.C.; Gosberton C.P.; Holbeach Bank County; Holbeach Infants; Kilton Church End C.P.; Spalding Glead Boys' and Girls' Secondary; Spalding Grammar V.A.; Spalding St. John's V.A.P.; Spalding St. Matthew's V.C.P.; Sutton St. James C.P.; Whaplode Saracen's Head C.P.; Wigtoft V.A.P. Documents from the County Architect, County Hall, Boston, Lincs. Tenders by Jan. 31.

**Hucknall, Notts.**—Erection of public conveniences (approximate area 800 sq. ft.) in the Market Square at the junction with Ogle Street for U.D.C. Applications to John Dudding and Partners, architects, 30 Clarendon Street, Nottingham, on and from Jan. 9. Deposit £2 2s., payable to U.D.C. Plans also seen at the office of the Engineer and Surveyor, Council Offices, Hucknall. Tenders by Feb. 3.

**Huntingdonshire.**—Proposed clinic, Nursery Road, Huntingdon, for Health Committee. Applications to S. M. Holloway, county architect, County Buildings, Huntingdon, by noon, Jan. 23. Tenders by March 6.

**Huntingdonshire.**—Ramsey Secondary Modern School—completion for Co. E.C. Applications to S. M. Holloway, county architect, County Buildings, Huntingdon, by noon, Jan. 11. Tenders by Feb. 15.

**Huyton-with-Roby, Lancs.**—Erection of 10 shops and six flats in one two-storey block, together with ancillary external works, on the St. John's Road (East) estate for U.D.C. Applications to the Architect and Housing Director, Grasscroft, Archway Road, Huyton, by Jan. 12.

**Ilford, Essex.**—Construction of extensions to sports pavilion, Hainault Recreation Ground, for B.C. Applications in writing to the Borough Engineer, Town Hall, Ilford. Deposit £2 2s. Tenders by Jan. 24.

**Ipswich, Suffolk.**—Proposed Gusford Primary School: Erection of a new primary school to be situated off Belstead Road for B.C.

Applications to Johns, Slater and Haward, architects, 32 Foundation Street, Ipswich, by Jan. 6. Deposit £3 3s., cheque payable to Corporation. Tenders by Feb. 16.

**Isle of Man.**—Builders work in connection with a passenger lift at Ballamona Hospital, Braddan, for Health Services Board. Applications to Kay and Gill, architects and surveyors, 22 Athol Street, Douglas. Deposit £2 2s. Tenders by Jan. 10.

**Leicestershire.**—Maintenance works on asphalt flat roofs at Melton Mowbray Sarson Modern Girls' School for C.C. Applications to the County Architect, 123 London Road, Leicester, by Jan. 9. Deposit £2 2s. Tenders by Jan. 23.

**Leyton, Essex.**—Following for B.C.: (1) Leyton County High School for Girls, extensions to provide new domestic science rooms in traditional construction, estimated cost £10,000; (2) Davies County Primary School, alterations to provide internal sanitary accommodation, estimated cost £5,500. Separate applications for each project should be sent to the Borough Engineer and Surveyor, Town Hall, Leyton, E.10, by Jan. 9.

**Liverpool.**—Construction of the following for City Council: (a) Extensions, etc., to kitchen, Gilmour C.P. School, Danefield Road, 19; (b) extensions, etc., to kitchen, Ellergreen High School, 11; (c) assembly hall, Corinthian Avenue C.P. School, 13. Documents from City Architect and Director of Housing, Blackburn Chambers, Dale Street, Kingsway, Liverpool, 2. Deposit £2 2s. each, payable to City Treasurer. Tenders by Jan. 13.

**Lothlingland, Suffolk.**—Provision of bathrooms, hot water circulating systems and drainage works, etc., at 22 dwellings, London Road, Wrentham, for R.D.C. The dwellings are divided into three groups and contractors may tender for any or all of the groups. Applications to the Engineer and Surveyor, Council Offices, Rectory Road, Lowestoft, by Jan. 9. Deposit £2 2s. cheque. Tenders by Feb. 4.

**Lowestoft, Suffolk.**—Erection of sports pavilion at Barnards Meadow, off Princes Walk, for B.C. Documents from the Borough Engineer's Office, 49 High Street, Lowestoft. Deposit £2. Tenders by Jan. 11.

**Luton, Beds.**—Erection of multi-storey car park for B.C. Apply by Jan. 18.

**Luton, Beds.**—(a) Precast floors and reinforced concrete work, 18 flats, Lewsey Farm estate; (b) supply and erection of mild steel balustrading to staircases and balconies, 18 flats, Lewsey Farm estate; (c) supply and delivery of ironmongery, 18 flats, Lewsey Farm estate; (d) electrical installation, Central Depot, Kingsway. Documents from Borough Architect, Town Hall, Luton. Tenders by Jan. 26.

**Manchester.**—Alterations to Birchfields primary school for City Council. Tenders by Jan. 26.

**Manchester.**—Alterations to Crossley Street canteen, Gorton, for City Council. Documents from City Architect, P.O. Box 488, Town Hall, Manchester. Tenders by Feb. 1.

**Manchester.**—Following for City Council: (a) Supplying and fixing metal windows and cladding; (b) asphalt and felt roofing work at Nicholls Secondary School, Ardwick. Documents from City Architect, P.O. Box 488, Town Hall, Manchester. Tenders by Jan. 20.

**Manchester.**—Workshop modernisation, Princes Road depot, for City Council. Apply by Jan. 12. Tenders by Feb. 6.

**Newcastle upon Tyne.**—Interior painting of part of the Byker Works, comprising electrical shop, fitting and machine shop and overhaul shop, all situated in one long bay for City Council. Documents from General Manager, Head Office, Manors, Newcastle upon Tyne, 1. Tenders by Jan. 25.

**North Down.**—Erection of eight garages at Comber and one at Killarn for R.D.C. Documents from the Council Offices, 2 Church Street, Newtownards. Tenders by Jan. 17.

**Northern Ireland.**—Alterations to post office at Portrush, for the Ministry of Finance. Documents may be seen at Room 103, Law Courts Building, Belfast, 1, and at Ministry of Labour and National Insurance, Local Office, Coleraine, and obtained from Law Courts Building, Belfast. Deposit £2. Tenders by Jan. 23.

**North Riding.**—Alterations and improvements to the Thornaby police station, for C.C. Applications to the County Architect, County Hall, Northallerton, by Jan. 7. Deposit £2 2s. Tenders by Feb. 1.

**Northumberland.**—Alterations and extensions to the police station and magistrates courts at Whitley Bay, for C.C. Applications to the County Architect, 30/32 Great North Road, Newcastle upon Tyne, 2, by Jan. 9.

**Perry, Corn.**—Building of a new factory and offices of a total area of 4,500 sq. ft. at Commercial Road. Completion of the works is required by May 31, 1961. Documents from

C. R. Corfield and Son, architect, Strand Chambers, Killigrew Street, Falmouth.

**Oldham, Lancs.**—Proposed conversion of former paint warehouse, Ascroft Street, into motor taxation and licensing offices for B.C. Documents from Sanger and Rothwell, chartered architects, York Chambers, Yorkshire Street, Oldham. Deposit £2 2s., cheques payable to Borough Treasurer. Tenders by Jan. 20.

**Penybont, Glam.**—Construction of shelter/conveniences at Pencoed and Sarn Cemeteries for R.D.C. Documents from the Engineer and Surveyor, Penybont Offices, Coity Road, Bridgend. Deposit £2 2s. each site. Tenders by Jan. 12.

**Plymouth.**—Erection of the following for City Council: (1) A secondary school, Devonport; (2) law courts in the civic centre. Applications to the City Architect, Seymour Road, Plymouth, by Jan. 9. Deposit £3 3s. each, payable to Corporation.

**Portsmouth.**—Following for City Council: (a) Eighty-eight flats, Wingfield Street (12-storey block). The building is to be a reinforced concrete framed structure on piles and clad with precast concrete slabs, all of which will be carried out by specialists as nominated sub-contractors to the general contractor. (b) Three shops and maisonnettes, Prospect Farm. (c) Portsmouth Secondary Modern School for Boys—provision of two new laboratories, etc. Applications to the City Architect, 1 Western Parade, Portsmouth, by Jan. 11. Deposit £1 each.

**Rochdale, Lancs.**—Erection of extensions to Mellor Street bus garage for B.C. The work comprises some 33,000 sq. ft. of prestressed post-tensioned shell concrete roofing with ancillary building work. Applications together with particulars of organisation and names and addresses of two referees, to Borough Surveyor, Town Hall, Rochdale, by Jan. 13.

**St. Helens, Lancs.**—Alterations at the Gamble Institute, Victoria Square, to extend and improve the accommodation for the School of Art and Crafts, for Education Committee. Applications to N. F. Newbury, director of education, Education Office, St. Helens, by Jan. 7. Plans seen at the office of the Education Surveyor, 13 Cotham Street, St. Helens. Tenders by Feb. 3.

**Skipton, Yorks.**—Internal decoration required in ward 1 at Cawder Ghyll Maternity Hospital, Skipton, for Bingley, Keighley, Skipton and Settle Hospital Management Committee. Documents from the Superintendent Engineer's Office, St. John's Hospital, Keighley. Tenders by Jan. 12.

**Stoke-on-Trent, Staffs.**—Construction of administration block, assembly hall and alterations to existing buildings at Junior Training Centre, Duke Street, Fenton, for City Council. Written application to the City Architect, Kingsway, Stoke-on-Trent, by Jan. 10. Deposit £2. Tenders by Feb. 1.

**Stoke-on-Trent, Staffs.**—Following for City Council: (a) New buildings—proposed county secondary school, Holden Lane—first instalment; proposed college of women's crafts, Cauldon—first instalment. Improvements—Highgate C. Secondary School, Tunstall—new lavatory block; rehabilitation of shower unit and new kitchen. (b) Heating installations—proposed county secondary school, Holden Lane—heating and hot water supply; proposed college of women's crafts, Cauldon—heating and hot water supply; Highgate C. Secondary School, Tunstall—alterations and additions to heating. (c) Electrical installations—College of Building, Cauldon—site works; provision of external lighting. (d) Miscellaneous—College of Building, Cauldon—site works; wrought-iron railings and gates. Written applications to the City Architect, Kingsway, Stoke-on-Trent, by Jan. 10. Deposit £2 each. Tenders by Feb. 6.

**Swansea.**—Erection of the Swansea Training College assembly hall, dining room and common room block for B.C. Applications to the Borough Architect, The Guildhall, Swansea, by Jan. 16. Deposit £5.

**Wallasey, Ches.**—Erection of 10 brick garages to be erected on three sites in the Cook Road/Raleigh Road area of Leasowe for B.C. Documents from the Borough Architect, Town Hall, Wallasey. Tenders by Jan. 19.

**Wallingford, Berks.**—Painting contractors who desire to be considered for inclusion on the list of selected tenderers for municipal painting contracts should submit their names, details of previous municipal contracts carried out and the names of three persons to whom reference may be made in connection with works previously carried out to E. N. Sinclair, borough surveyor, Municipal Offices, High Street, Wallingford. The Council normally let a contract each year for approximately 100 municipal houses and a number of small municipal properties.

**West Riding.**—Following works for C.C.: (1) Improvement of the frontage at Crigglestone Secondary School; (2) demolition of

air-raised shelters and reinstatement of grounds at Wombwell Technical and Secondary Modern School; (3) provision of access and fencing to additional land at Selby Girls' High School; (4) additional items at Thorne Grammar School extensions; (5) alterations to the shower block at Batley Secondary School for Boys; (6) new heating and additional radiators, etc., at Stocksbridge C.E. School; (7) proposed adaptations at Kirkburton Farnley Tyas C.E. School and caretaker's house; (8) provision and installation of floodlighting at Pudsey Grammar School. Documents from the following for contracts (1), (2) and (3) the office of the Divisional Architect, Bishopgarth, Westfield Road, Wakefield; for (4) and (5) the office of the County Architect, Bishopgarth, Westfield Road, Wakefield; for (6) and (7) the office of the Divisional Architect, Flint Street, Huddersfield; and for (8) the office of the Divisional Architect, Salisbury Buildings, Albert Street, Harrogate. Tenders by Jan. 23.

**West Riding.**—Renewal of roof coverings to certain parts of Goole Grammar School for C.C. Documents from the Divisional Education Officer, Education Offices, Goole. Tenders by Jan. 13.

**Worcester.**—Interior redecoration and repairs of certain rooms at the City Police Headquarters, Birdport, for City Council. Documents from City Engineer and Surveyor, 22 Bridge Street, Worcester. Deposit £2 2s. (cheques payable to Corporation). Tenders by Jan. 17.

**Worcester.**—Work required to butcher's shop and living accommodation over at 116 Rose Avenue and construction of preparation room rear of fish and chip shop at 157 Rose Avenue, Tolladine, for City Council. Documents from the City Engineer and Surveyor, 22 Bridge Street Worcester. Deposit £2 2s. (cheques payable to Corporation). Tenders by Jan. 16.

**Workington, Cumb.**—Extension and adaptation at St. Joseph's Roman Catholic Secondary School premises for the Ampleforth Abbey Trustees. Written applications to G. N. C. Swift, clerk of the County Council, The Courts, Carlisle, by Jan. 16.

**Wortley, Yorks.**—Supply and erection of multiple garages (13) on two sites at Oughtibridge, near Sheffield, for R.D.C. Documents from the Engineer and Surveyor, Council Offices, Grenoside. Tenders by Jan. 26.

#### CLOTHING AND TEXTILES

**Hamilton, Lanarks.**—Supply of police uniforms for B.C. Documents from Chief Constable, 13 Clydesdale Street, Hamilton. Tenders by Jan. 13.

**Twickenham, Middx.**—Supplying bib and brace overalls, overall jackets and industrial gloves. Documents from the Borough Engineer, Municipal Offices, Twickenham. Tenders by Jan. 16.

#### DEMOLITION

**Aldershot, Hants.**—Demolition and clearance of the mansion and outbuildings at Aldershot Park for B.C. Documents from the Borough Engineer and Surveyor, Town Hall, Aldershot. Deposit £1 1s. Tenders by Jan. 10.

**Dunstable, Beds.**—The demolition and clearance of property, comprising 29, 31, 33, 37, 39 and 41 Church Street, and 1, 2 and 3 Walnut Tree Terrace for B.C. Documents from the Chief Public Health Inspector, Priory House, Dunstable. Deposit £1 1s. Tenders by Jan. 13.

**Fifeshire.**—Demolition and site clearance of land at Old Buckhaven, comprising approximately 65 unfit and derelict dwelling houses and three other two-storey commercial buildings for C.C. Documents from Matthew Pollock, county clerk, County Buildings, Cupar. Tenders by Jan. 27.

**Lowestoft, Suffolk.**—Demolition and clearance of 5 and 6 The Esplanade, and Barn and site clearance on land between 63 and 73 Oulton Road, for B.C. Documents from the Borough Engineer's Office, 49 High Street, Lowestoft. Deposit £1. Tenders by Jan. 16.

**Ramsate, Kent.**—Demolition of 25-47 and 24-36 Plains of Waterloo, for B.C. Documents from the Borough Engineer and Surveyor, Municipal Buildings, Ramsate. Deposit £2 2s. Tenders by Jan. 16.

**Sheffield, Yorks.**—Complete demolition and removal of the premises comprising of the Central Picture House and 73 and 75 The Moor, for City Council. Documents from the Estates Surveyor, Town Hall, Sheffield, 1. Deposit £2 2s., cheques to City Council. Tenders by Jan. 16.

**Sheffield, Yorks.**—Woodside Lane redevelopment scheme for City Council, including the complete demolition and removal of approximately 75 properties, including two public-houses, all situated in stage M of the above-mentioned scheme. Documents from the



Estates Surveyor, Town Hall, Sheffield, 1. Deposit £2 2s (cheques payable to City Council). Tenders by Jan. 9.

**Tipton, Staffs.**—Demolition of industrial buildings and chimney stack at premises formerly known as British Waterways Depot, at junction of Ocker Hill Road and Spring Street for B.C. Documents from the Borough Engineer and Surveyor, Municipal Buildings, Sedgley Road West, Tipton. Deposit £2 2s. cheques payable to Corporation. Tenders by Jan. 13.

#### ELECTRICAL

**Bristol.**—Electrical installation at new office and warehouse, Brislington, for Bill Switchgear, Ltd. Applications to Ernest F. Tew, architect, 11 Belmont, Bath, by Jan. 9.

**Clogher, Tyrone.**—Following for R.D.C.: Aughnacloy and Fivemiletown—42 houses; Clogher (Crossowen 3)—12 houses—electrical installation and supply of ironmongery. Documents from the offices of Munce and Kennedy, chartered architects and consulting engineers, 133 University Street, Belfast, 7. Deposit £2 2s. Tenders by Jan. 13.

**Luton, Beds.**—Electrical installations, clinics at Gooseberry Hill and Leagrave High Street for B.C. Documents from the Borough Architect, Town Hall, Luton. Tenders by Jan. 10.

**Newcastle upon Tyne.**—Following installations required in the Home for Aged Persons, on section D, Montagu Estate, for City Council: (i) Electrical installation; (ii) heating, hot and cold water, gas installation and ventilation equipment; (iii) one electrically operated automatic passenger lift. Applications in writing to the City Architect, 18 Cloth Market, Newcastle upon Tyne, 1. Tenders by Feb. 27.

**Radnorshire.**—Installation of a passenger lift in the County Hall, Llandrindod Wells, for C.C. Documents from the County Architect, County Hall, Llandrindod Wells. Tenders by Jan. 13.

**Sunderland, Dur.**—Electrical installation to Humbledon Training Centre for B.C. Documents from Borough Architect, Grange House, Stockton Road, Sunderland. Tenders by Jan. 21.

**Witney, Oxon.**—Electrical installation improvements in 50 pre-war houses at Eynsham for R.D.C. Documents from the Council's Engineer and Surveyor, 36 Market Square, Witney. Tenders by Jan. 17.

#### FENCING

**Amphill, Beds.**—Supply and erection of some 360yd. of 6ft. high chain link fence and gates at the Broghborough refuse tip for R.D.C. Documents from the Engineer and Surveyor, The Limes, 12 Dunstable Street, Amphill, Bedford. Tenders by Jan. 16.

**Chadderton, Lancs.**—Fencing of Princes Road playing fields for U.D.C., including supply and erection of approximately 415 lin. yd. of Spear Head wrought-iron fencing, 6ft. high, together with two pairs of wrought-iron gates and posts to match. Documents from the Engineer and Surveyor, Town Hall, Chadderton. Tenders by Jan. 20.

**\*Croydon, Surrey.**—Chain link fencing for B.C. Tenders by Jan. 27.

**East Dereham, Norfolk.**—Supply and erection of approximately 130yd. of concrete post and chain link fencing and sundry labours to the new road frontage at Littlefields Lane, for U.D.C. Applications to Tuthill and Burton, architect and surveyors, 4b Market Place Dereham. Tenders by Jan. 9.

**\*Salford, Lancs.**—Fencing and gates for City Council. Tenders by Jan. 14.

**Salford, Lancs.**—Supply and delivery of wrought-iron fencing for the Ordsall Flats estate for City Council. Documents from the Director of Parks, Buile Hill Park, Salford, 6. Tenders by Jan. 14.

#### GAS AND WATER SUPPLY

**Bath.**—Following at Oakford pumping station for corporation waterworks: (a) submersible pumping plant and switchgear; (b) magnetic water meter with associated integrator/recorder; and (c) 6in. dall tube with integrating and recording flow meter. Documents from the City and Waterworks Engineer, 8a Terrace Walk, Bath. Deposit £2 2s. Tenders by Jan. 10.

**Castlereagh, Down.**—Supplying and laying of approximately 230 lin. yd. of 4in. diameter spun-iron water main, together with meter chamber and other ancillary fittings, at Croft Road, Holywood, for R.D.C. Documents from the Council Offices, 368 Cregagh Road, Belfast, 6. Deposit £3. Tenders by Jan. 12.

**Chesterfield, Derbys.**—Construction of a steel-framed, brick-faced pumphouse building on prepared foundations for North East Derbyshire Joint Water Committee. Applications, with details of similar work recently executed, to H. O. Hawkins, clerk, Rural Council House, Saltergate, Chesterfield, by Jan. 21.

**Chesterfield, Derbys.**—Construction of a steel-framed, brick-faced pumphouse building on prepared foundations for East Derbyshire Joint Water Committee. Applications, together with details of similar work recently executed, should be submitted to H. O. Hawkins, clerk, Rural Council House, Saltergate, Chesterfield, by Jan. 21.

**Diss, Norfolk.**—Water supply, contract 3, for U.D.C. Sinking and proving of an 18in. diameter borehole lined for a depth of 170ft. and unlined for a further depth of 230ft. at Diss waterworks, together with other incidental works. Documents from A. P. I. Cotterell and Son, engineer, 54 Victoria Street, Westminster, S.W.1. Deposit £3 3s. Plans also seen at the Council Offices, Diss. Tenders by Jan. 9.

**East Lothian.**—Sinking of approximately 12 exploratory boreholes on the sites of proposed reservoirs in the Whiteadder and Faseney Valleys in the Lammermuir Hills, about 17 miles south of Haddington, for Water Board. Documents from G. H. Hill and Sons (Manchester), civil engineers, 51 Mosley Street, Manchester, 2. Deposit £2 2s., payable to G. H. Hill and Sons (Manchester). Tenders by Jan. 31.

**Harrogate, Yorks.**—Following work for Claro Water Board: (1) Construction of a small brick and cast stone booster pumping station; (2) excavation and refilling of approximately 1,650 lin. yd. of trench for a 3in. diameter water main to be laid by the Board. Documents from the Engineer to the Board, Municipal Offices, Harrogate. Tenders by Jan. 16.

**Lunesdale, Lancs.**—Laying of approximately 300yd. of 4in. a.c. water main and 110yd. of service pipes in a.c. and copper in Main Street, Hornby, for R.D.C. Documents from John A. Hallsworth, clerk of the Council, Council Offices, Hornby, near Lancaster. Tenders by Jan. 18.

**Lurgan, Armagh.**—Tannaghmore North and District water distribution scheme, contract 6, for R.D.C., including supply and laying approximately 21,100 lin. yd. of 4in. diameter screwed gland spun-iron pipes together with other ancillary work. Documents from G. B. G. Thick, engineer, 38 Market Street, Lurgan. Deposit £5 5s. Tenders by Jan. 23.

**Mablethorpe and Sutton, Lincs.**—Laying of 490 lin. yd. 5in. diameter asbestos-cement pressure pipe water main and ancillary fittings, in Theddlethorpe Road, Mablethorpe, for U.D.C. Documents from the Council Offices, Mablethorpe. Deposit £1 1s. Tenders by Jan. 9.

**\*Newry No. 2, Armagh.**—Supply and installation of booster pump units at Cullyhanna and Lislea for R.D.C. Deposit £5 5s. Tenders by Feb. 9.

**Pateley Bridge, Yorks.**—Construction of a chlorination and pump house at Eagle Hall, Pateley Bridge, for Claro Water Board. Documents from John H. Haiste and Partners, consulting engineers, Belmont House, 20 Wood Lane, Headingley, Leeds, 6. Deposit £3 3s., cheques payable to the Board. Tenders by Jan. 20.

**Preston, Lancs.**—Laying of approximately 3,400yd. of 18in. and 12in. diameter asbestos-cement mains, together with short lengths of 18in. diameter spun-iron pipes under proposed Motorway and 15in. asbestos-cement over new railway footbridge, all within the Urban District of Leyland (Contract 2), for Preston and District Water Board. Documents from J. F. Bailey, engineer and manager, Preston and District Water Board, Municipal Building, Preston. Deposit £5 5s. Tenders by Jan. 20.

**\*Rhyl, Flint.**—Mainlaying for U.D.C. Deposit £2. Tenders by Jan. 31.

**\*Rhyl, Flint.**—Pumping plant at Aled pumping station for U.D.C. Deposit £1. Tenders by Jan. 31.

**Shepshed, Leics.**—Laying of about 870yd. of 3in. water main with appurtenant works in Ingleberry Road for U.D.C. Documents from R. B. Jones, surveyor, Council Offices, Shepshed. Deposit £2 2s. Tenders by Jan. 16.

**\*Uttoxeter, Staffs.**—Water supply contract 2 for U.D.C. Deposit £5 5s. Tenders by Jan. 25.

#### HARBOURS, PIERS AND SEA DEFENCE WORKS

**\*Poole, Dorset.**—Coast protection work for B.C. Deposit £2 2s. Tenders by Jan. 30.

**Swansea.**—Reconstruction of part of the quay wall at the North Dock Basin for B.C. The work consists of the driving of 135ft. of 50ft. long (steel sheet) piles outside the existing quay wall and filling the space between the piles and the existing wall with hardcore. A concrete tie slab is then to be cast on top of the wall. Documents from the office of R. D. Moody, borough engineer and surveyor, Guildhall, Swansea. Deposit £3, cheques payable to B.C. Tenders by Jan. 28.

#### HEATING AND VENTILATING

**Airdrie, Lanarks.**—Conversion of boiler installation in Sir John Wilson Town Hall to oil firing for B.C. Documents from the Town Clerk, Municipal Buildings, Airdrie. Tenders by Jan. 30.

**Aylesbury, Bucks.**—Hot water installations and minor alterations to pre-war houses as follows for R.D.C.: (Contract 1) Seven houses, Temple Street Brill; (2) seven houses, Thame Road, Brill; 12 houses at Ickford; (4) 10 houses at Chilton. Documents from T. J. Ridley, of Raymond White and Ridley, architects, 4 Temple Square, Aylesbury. Deposit £3, payable to the Council. Tenders by Jan. 17.

**Clutton, Som.**—Hot water installations (back boilers) at 1 to 26 The Mead, for R.D.C. Documents from the Housing Manager, Council Offices, Temple Cloud, near Bristol. Tenders by Jan. 18.

**Luton, Beds.**—Following for B.C.: (a) Heating, hot and cold water services; (b) electrical installation. Limbury Meads C.P. Infants' School. Documents from Borough Architect, Town Hall, Luton. Tenders by Jan. 31.

**\*Slough, Bucks.**—Mechanical engineering services at Slough Hospital, Wexham Park, for North West Metropolitan Hospital Board. Apply by Jan. 31.

**Stoke-on-Trent, Staffs.**—Following at Queen's Park, Longton, for City Council: Heating—alterations and extensions to heating of greenhouses; electrical—minor electrical installations. Written applications to the City Architect, Kingsway, Stoke-on-Trent, by Jan. 10. Deposit £2 each. Tenders by Feb. 6.

**Wisbech, Cambs.**—Installation of domestic hot water systems to 141 houses, consisting of gas or electric water heater, wash-hand basin and necessary plumbing, for B.C. Documents from the Borough Engineer, Church Terrace, Wisbech. Tenders by Jan. 23.

**Witney, Oxon.**—Installation of hot water supply systems in pre-war Council houses at Eynsham for R.D.C.: (Contract 1) Sparacre Lane and Pelican Place, 35; (2) Clover Place and Hanborough Road, 20. Documents from the Council's Engineer and Surveyor, 36 Market Square, Witney. Tenders by Jan. 17.

#### HOUSING SCHEMES

**Barrow-in-Furness, Lancs.**—Thirty-two flats in eight blocks, Carr Lane, Walney, for B.C. Documents from the office of J. N. Flitcroft, borough engineer and surveyor, Town Hall, Barrow-in-Furness. Deposit £2 2s. Tenders by Jan. 25.

**Berkshire.**—Erection of two three-bedroom, four two-bedroom houses and six garages in traditional brick construction at Langley Hill Close, Tilehurst, Reading, for C.C. Documents from the County Architect, Wilton House, Parkside Road, Reading. Deposit £2 2s. Tenders by Jan. 31.

**Bradford, Yorks.**—Erection of 10 dwellings in two terrace blocks, with necessary site works, at Old Park Road, Thorpe Edge estate, for City Council. Documents from the offices of the City Engineer and Surveyor, Town Hall, Bradford. Deposit £2 2s. Tenders by Jan. 24.

**Bournemouth, Hants.**—Conversion of 1, 2, 3 and 4 Southill Gardens, Winton, into eight self-contained flats for B.C. Documents from the Borough Architect's Office, Room 106, Town Hall, Bournemouth. Deposit £1 1s. Tenders by Jan. 17.

**\*Buckley, Flint.**—Erection of houses and flats for U.D.C. Apply by Jan. 14. Deposit £3 3s. Tenders by Feb. 6.

**Camelford, Corn.**—Improvements and repairs to 16 houses at Medrose, Delabole, for R.D.C. Documents from the Surveyor, Council Offices, Camelford. Deposit £2 2s. cheque. Tenders by Jan. 25.

**Cardiff.**—Erection of 49 dwellings and 20 garages in three contracts as follows for City Council: (a) 17—three-bedroom houses and 20 garages at Parracombe Crescent, Llanrumney; (b) 20—two-storey one-bedroom flats in one block at Portfield Crescent, The Crystals, Llanishen; (c) 12—four-storey three- and four-bedroom maisonettes at Loudoun Square, Butetown. Contractors may tender for one or more contracts but each one must be tendered for separately. Documents from the City Architect's Department, Municipal Offices, Greyfriars Road, Cardiff. Deposit £2 2s. each, cheques payable to Corporation. Tenders by Jan. 17.

**Cuckfield, Sussex.**—Erection of 10 dwellings at Copthorne, contract 150, for R.D.C. Documents from A. Hutchings, engineer and surveyor, Rural Council Offices, Boltro Road, Haywards Heath, Sussex. Deposit £2 2s. Tenders by Jan. 23.

**Gillingham, Kent.**—Erection of one block of 10 flats and one pair of houses at Wood Street, Brompton, for B.C. Documents from the Borough Engineer's Department, Municipal



Buildings, Gillingham, after Jan. 9. Deposit £5 5s., cheques payable to Corporation. Tenders by Jan. 31.

**Gipping, Suffolk.**—Erection of two one-bedroom bungalows at Coddham, for R.D.C. Documents from the Engineer and Surveyor, Council Offices, Needham Market, near Ipswich. Deposit £3. Tenders by Jan. 16.

**Hereford.**—Erection and completion of 12 traditional bungalows with garages on a site at Hillside, Hereford, for City Council. Documents from the City Architect, Town Hall, Hereford. Deposit £2 2s. Tenders by Feb. 6.

**Holland.**—Erection of one district nurse's bungalow in Rotten Row, Pinchbeck, for C.C. Documents from the County Architect. Tenders by Jan. 23.

**Huddersfield, Yorks.**—Erection of a detached dwellinghouse at Lindley, for B.C. Documents from the Borough Architect's Office, High Street Buildings, Huddersfield. Deposit £1 1s. Tenders by Jan. 16.

**Leyburn, Yorks.**—Erection of six dwellings at Newton-le-Willows for R.D.C. Documents from the Surveyor of the Council at Thornborough Hall, Leyburn. Deposit £2. Tenders by Feb. 4.

**Malvern, Worcs.**—Exterior painting of 160 houses and flats on the Pound Bank estate for U.D.C. Documents from D. White, housing manager, The Grange, Grange Road, Malvern. Tenders by Feb. 13.

**Margate, Kent.**—Erection of the following for B.C.: (Contract 1) 25 flats and eight flats; (2) eight houses and four flats; (3) 12 houses and eight flats; (4) eight houses. Written applications to the Borough Engineers, 38 Grosvenor Place, Margate. Tenders by Jan. 28.

**Omagh, Tyrone.**—Erection of 23 dwellings at Dromore for R.D.C. Documents from R.D.C. Offices, Lisnamallard, Omagh. Deposit £5 5s. Plans also seen at the offices of Ostick and Williams, chartered architects, 72 High Street, Belfast, or F. H. Wright and Partners, quantity surveyors, 79 Botanic Avenue, Belfast. Tenders by Jan. 24.

**St. Neots, Hunts.**—Construction of seven dwellings, one shop, two garages and site works at Old Skin Yard, for U.D.C. Documents from H. H. Thomas, clerk of the Council, Council Offices, Huntingdon Street, St. Neots. Tenders by Feb. 1.

**Salford, Lancs.**—Two blocks of flats at Sussex Street for City Council. Deposit £3 3s. Tenders by Feb. 7.

**Tiverton, Devon.**—Erection of nine bungalows at New Street, Cullompton, and six bungalows at Sampford Peverell, for R.D.C. Applications to G. Gerald G. Saunders, architect, 12 Lyndhurst Road, Exeter, by Jan. 7. Deposit £2 2s. each site.

**Wokingham, Berks.**—Erection of 31 dwellings in Waterloo Road, for B.C. Documents from the Borough Surveyor, Town Hall, Wokingham. Deposit £2 2s. Tenders by Jan. 23.

#### MATERIALS AND SUPPLIES

**Ashford, Kent.**—Supply of materials and services for U.D.C. Tenders by Jan. 27.

**Barking, Essex.**—Supply of materials for B.C. Tenders by Jan. 27.

**Basildon, Essex.**—Supply of materials for U.D.C. Tenders by Jan. 20.

**Beckenham, Kent.**—Following supplies and work during the year beginning April 1, 1961 for B.C.: Concrete kerbs and quadrants; concrete paving slabs; cement; tar and bituminous emulsions for surface dressing; granite chippings; coarse aggregates, sand and shingle; ready-mixed concrete; ready-mixed mortar; stoneware pipes; tarred macadam; cold asphalt and bitumen macadam; brooms; petrol, diesel oil and paraffin; lubricating, etc., oils; motor haulage; window cleaning; jobbing work (building trades); jobbing work (electrical trades). Documents from the Borough Engineer, Town Hall, Beckenham. Tenders by Jan. 16.

**Birkenhead, Ches.**—Supply of petrol, derv, gas and marine diesel oils and boiler fuel oil for the 12 months commencing April 1, 1961, for B.C. Documents from the Town Clerk, Town Hall, Birkenhead. Tenders by Jan. 24.

**Bishop Auckland, Dur.**—Supply of the following for the 12 months from April 1, 1961, to March 31, 1962, for U.D.C.: Surveyor's and Health Departments—(1) Hot bitumen (spraying grade) and cold bitumen emulsion; (2) coated macadam and cold asphalt (i.e., bituminous limestone, bituminous slag, cold asphalt); (3) slag and whinstone chippings; (4) kerbs and flags; (5) gravel and sand; (6) cement; (7) ready-mixed concrete; (8) hydrate of lime; (9) stoneware pipes, etc., precast concrete pipes and gullies; (10) manhole covers and castings; (11) brushes; (12) paints and varnishes; (13) soiled salt; (14) hire of team labour and motor haulage; (15) gas oil, heating oil, kerosene and derv; (16) coal and coke; (17) dustbins; (18) electric lamps; (19)

disinfectants and cleaning agents; (20) window cleaning; (21) petrol; (22) lubricants; (23) brooms and shovels. Documents from F. Mole, engineer and surveyor, The Elms, Silver Street, Market Place, Bishop Auckland. Tenders by Feb. 10.

**Bradford, Yorks.**—Supply of materials for City Council. Tenders by Feb. 4.

**Bromley, Kent.**—Annual tenders for B.C. Tenders by Jan. 27.

**Buckinghamshire.**—Annual tenders for C.C. Tenders by Feb. 3.

**Burton-upon-Trent, Staffs.**—Supply of the following materials for 12 months from March 31, 1961, for B.C.: (1) Granite concrete kerbs, channels and flags, broken stone foundation material; (2) bitumen macadam and fine cold asphalt; (3) hot asphalt (B.S. 594, 1958); (4) gravel, sand, ready-mixed concrete and lean mix concrete; (5) manhole covers and frames and gully gratings and frames; (6) electric lamps for street lighting and other purposes (tungsten filament, sodium discharge, and fluorescent tubes); (7) lime for sewage treatment. Documents from the Borough Engineer and Surveyor's Office, Town Hall, Burton-upon-Trent. Tenders by Jan. 21.

**Cardiganshire.**—Following in respect of the year ending Mar. 31, 1962, for C.C.: (1) Dry stone, chippings, tarred macadam and bituminous macadam and the haulage thereof; (2) laying coated macadam by machine; (3) hire of motor lorries (day work); (4) refined tar and bitumen for hot application; (5) cold bitumen emulsion; (6) surface treatment of roads; (7) oils; (8) cement and pipes; (9) precast concrete tubes; (10) tools and waste; (11) hire of road rollers; (12) waterproof clothing. Documents from the County Surveyor, County Hall, Aberaeron. Tenders by Jan. 27.

**Carshalton, Surrey.**—Supply of no waiting signs for U.D.C. Tenders by Jan. 25.

**Carshalton, Surrey.**—Supply of materials, etc., for U.D.C. Tenders by Jan. 23.

**Croydon, Surrey.**—Supply of road materials for B.C. Tenders by Jan. 19.

**Devonshire.**—Supply of petrol. Derv, fuel oils, etc., for year commencing Apr. 1, 1961, for C.C. Documents from County Supplies Office, Pinhoe Road Trading Estate, Whipton, Exeter. Tenders by Jan. 20.

**Doncaster, Yorks.**—Annual tenders for supplies for B.C. Tenders by Jan. 27.

**Dorset.**—Road materials and services for C.C. Tenders by Jan. 23.

**Easington, Dur.**—Following supplies during the year ending March 31, 1962, for R.D.C.: Petrol (commercial); oils (graded); grease; dustbins. Documents from the Cleansing Superintendent, Council Offices, Easington. Tenders by Feb. 1.

**East Suffolk.**—Supplies in bulk for C.C. Tenders by Jan. 10.

**Elland, Yorks.**—Supply of the following materials and haulage, etc., during the year ending March 31, 1962, for U.D.C.: (1) Stone flags, kerb edging and setts; (2) precast concrete flags and kerbs; (3) granite or basalt chippings; (4) quartzite chippings; (5) tarred limestone; (6) bituminised macadam and cold asphalt; (7) tarred slag; (8) tar, pitch creosote oil and bitumen emulsion; (9) broken stone, gravel and sand; (10) Portland cement; (11) salt glazed ware pipes and gullies; (12) cast-iron gully grates and frames and manhole covers and frames; (13) painter's stores; (14) brushes for mechanical sweeper; (15) haulage; B.W.I. plaster boards and mastic; S.W.I. lime. Documents from F. R. Birkhead, engineer and surveyor, Council Offices, Elland, on receipt of foolscap s.a.e. Tenders by Jan. 30.

**Farnborough, Hants.**—Supply of materials for U.D.C. Tenders by Jan. 25.

**Farnworth, Lancs.**—Supply of road materials for B.C. Tenders by Jan. 28.

**Flintshire.**—Supply of filling materials and ashes for C.C. Tenders by Jan. 30.

**Gillingham, Kent.**—Supply and delivery of the following materials for 12 months commencing April 1, 1961, for B.C.: (1) Aggregates for concrete; (2) bitumen macadam; (3) bituminous tarmacadam; (4) bricks—stock; (5) bricks—clay engineering; (6) cast manhole covers and frames; (7) cement—Portland and rapid hardening; (8) coal and coke; (9) cold asphalt and precast granite chippings; (10) cold emulsion of bitumen; (11) concrete kerbs; (12) concrete flags—precast; (13) concrete street gullies; (14) concrete—premixed; (15) dustbins—mild steel; (16) electrical switches and accessories, part I; (17) electrical conduit, part II; (18) electrical wire, cables and accessories, part III; (19) electric lamps; (20) fencing posts, stakes and rolled chestnut fencing; (21) fuel oil (for municipal buildings); (22) fuel oil (for Rainham Branch Library); (23) general stores (including hardboards); (24) glazed stoneware pipes and fittings; (25) granite chippings; (26) gravel for road gritting; (27) hired transport; (28) painting materials; (29) petroleum spirit, derv, etc.; (30) rainwater goods; (31) refilling Lacre sweeper and collector brooms;

(32) road surface dressing; (33) sand; (34) sand/lime mortar—dry mixed; (35) scavenging brooms; (36) street name plates; (37) tyres for motor vehicles and plant. Documents from the Borough Engineer, Municipal Buildings, Gillingham. Tenders by Jan. 16.

**Hebburn, Dur.**—Supply of materials for U.D.C. Tenders by Jan. 17.

**Heston and Isleworth, Middx.**—Supply of materials for B.C. Tenders by Jan. 17.

**Horbury, Yorks.**—Annual contracts for U.D.C. Tenders by Jan. 25.

**Leighton Buzzard, Beds.**—Supply of materials for U.D.C. Tenders by Feb. 1.

**Manchester.**—Supply of bricks for City Council. Tenders by Jan. 23.

**Manchester.**—Supply of 900 square-topped galvanised steel refuse containers, about 3 cu. ft. capacity for City Council. Documents from the Director of Public Cleansing, Town Hall, Manchester, 2. Tenders by Jan. 10.

**Middlesex.**—Supply of services and materials for C.C.

**Newbury, Berks.**—Annual tenders for B.C. Tenders by Jan. 28.

**Oldbury, Worcs.**—Supply of materials for B.C. Tenders by Jan. 27.

**Pembrokeshire.**—Following road materials and services for the financial year ending Mar. 31, 1962, for C.C.: (1) (a) Supply of broken stone chippings, tarmacadam, bituminous macadam, open-textured asphalt carpet and fine asphalt at quarries, (b) haulage of above road materials from quarries to sites of work; (2) mechanical haulage; (3) road rolling and scarifying; (4) concrete kerbs, channels, paving flags, etc.; (5) steam coal; (6) cold bitumen emulsion; (7) hot tar or bitumen for surface dressing (including application by tank sprayer); (8) stoneware and concrete pipes; (9) cement; (10) cast-iron gully gratings and frames, manhole and foot-path covers, etc.; (11) hire of drott shovels, bulldozers and excavators. Documents from the County Surveyor, County Offices, Haverfordwest, Pems. Tenders by Jan. 27.

**Plymouth.**—Supply and delivery of the following materials for City Council: (1) Road and building stone—Elvan, granite, limestone, coated macadam; (2) precast concrete flagstones; (3) sand for concreting, asphalt and general purposes, for the period April 1, 1961, to March 31, 1962. Tenders by Jan. 31.

**Portadown, Armagh.**—Supply of the following in respect of the financial year ending Feb. 21, 1962, for B.C.: (Section 1) Coarse, fine and all-in aggregate for concreting purposes, tarred and bituminous macadam; (2) cement and concrete products, ready-mix concrete; (3) glazed earthenware pipes and bends; (4) miscellaneous items, including bricks, barrows, bituminous emulsion and sealer, coal, rubber footwear, picks, shovels, danger lamps, buckets, dustbins, blacksmith work on pick heads, compressor pins, etc., gully gratings, manhole covers and frames; protective clothing and uniforms; (5) tyres; (6) electric light bulbs; (7) motor spirits and oils. Documents from the Borough Surveyor, Tavanagh House, Portadown. Tenders by Jan. 13.

**Radnorshire.**—Following for the year ending March 31, 1962, for C.C.: (1) Supply and delivery of roadstone and coated macadam; (2) surface dressing by pressure spraying machines; (3) hire of Barber-Greene road surfacing machine; (4) hire of lorries; (5) hire of road rollers; (6) supply of cement; (7) supply of stoneware, concrete and agricultural pipes; (8) cold emulsion. Documents from the County Surveyor, County Hall, Llandrindod Wells, Radnorshire, on receipt of foolscap s.a.e. Tenders by Jan. 27.

**Rayleigh, Essex.**—Annual tenders for U.D.C. Tenders by Jan. 16.

**Somerset.**—Supply of materials and services for C.C. Tenders by Jan. 21 and Feb. 13.

**Southall, Middx.**—Supply of materials for B.C. Tenders by Jan. 24.

**Stoke-on-Trent, Staffs.**—Tenders for stores for City Council. Tenders by Jan. 30.

**Surrey.**—Supply of materials and services for C.C. Tenders by Jan. 21.

**Twickenham, Middx.**—Supply of materials for B.C. Tenders by Jan. 23.

**Watford, Herts.**—Supply of materials and services for B.C. Tenders by Feb. 1.

**Wembley, Middx.**—Supply of materials for B.C. Tenders by Jan. 27.

**Westmorland.**—Supply of tar for C.C.

**West Suffolk.**—Supply of road materials, etc., for C.C. Tenders by Jan. 23.

**Whitworth, Lancs.**—Supply of materials for a period of 12 months commencing April 1, 1961, for U.D.C.: (1) Concrete flags and kerbs; (2) bituminous granite; (3) local broken stone; (4) sand; (5) coke and coal; (6) tools and brooms. Documents from the Engineer and Surveyor, Council Offices, Whitworth, near Rochdale. Tenders by Jan. 16.

\***Wimbledon, Surrey.**—Annual supply of materials for B.C. Apply by Jan. 26.

#### MISCELLANEOUS

\***Scotland.**—N.A.T.O. Common Infrastructure stage 6, naval base instructions—roadside metering pumps, motor-driven fire pumps, oil-fired destructor furnace and dust extraction plant. Applications by Jan. 31. Tenders by May 1.

#### PLANT AND MECHANICAL TRANSPORT

\***Bristol.**—Supply of plant for City Council. Tenders by Feb. 1.

\***Dundee, Angus.**—Supply and delivery of one diesel engine crawler tractor and angle/bulldozer, with cab, suitable for work on controlled refuse tip, for City Council. Sealed tenders, endorsed Cleansing-Bulldozer, to the Town Clerk, City Chambers, Dundee, by Jan. 30.

\***Halesowen, Worcs.**—Supply of one 10-12cwt. or similar type motor van for B.C. Documents from the Borough Engineer and Surveyor, Council House, Halesowen. Tenders by Jan. 14.

\***Lothian, Suffolk.**—Supply and delivery of a diesel refuse collection vehicle having a capacity between 18 and 25 cu. yd., delivery being required by May 1, 1961, for R.D.C. Suppliers are invited to submit their own specification and full particulars. Tenders in plain sealed envelopes endorsed "Refuse Collection Vehicle," to G. W. Setterfield, clerk of the Council, Council Offices, Rectory Road, Lowestoft, by 10 a.m. Jan. 16.

\***Manchester.**—Supply and delivery of one 3-ton chassis box (diesel) van for Education Committee. Documents from the Chief Education Officer, P.O. Box 480, Manchester, 3. Tenders by Jan. 25.

\***Newtownabbey, Antrim.**—Supply and delivery of a 7-ton diesel-engined tipping vehicle for U.D.C. Documents from the Town Surveyor, Town Hall, Newtownabbey. Tenders by Jan. 23.

\***West Ham, Essex.**—Supply of one new mobile compressor, rotary or reciprocating type, diesel engine for B.C. The following offered in part exchange two portable Climax compressors. Documents from the Borough Engineer, West Ham Town Hall, Stratford, E.15. Tenders by Jan. 13.

#### PLAYING FIELDS, PARKS, ETC.

\***Flintshire.**—Supply and delivery to the various schools in the county of the following for C.C.: (1) Grass seeds; (2) fertilizers; (3) weed killers. Documents on receipt of a stamped and addressed envelope, from B. H. Williams, director of education, County Education Offices, Mold.

\***Newtownabbey, Antrim.**—Provision of playing fields at Jordanstown School. Documents from the offices of W. H. Stevens and Sons, chartered quantity surveyors, 13 Donegall Square North, Belfast, 1. Deposit £3 3s. Tenders by Jan. 14.

#### ROADS, BRIDGES AND SITE WORKS

\***Altrincham, Ches.**—Lawn cemetery at the Crematorium, Whitehouse Lane, Dunham Massey, near Altrincham, for the Altrincham, Bowdon, Hale and District Joint Cemetery Board, comprising the provision of some 1,700 sq. yd. of tarmacadam roads and footways, some 250yd. of 9in. and 6in. surface water sewers, together with water main and appurtenant work. Documents from the Engineer to the Board, Dunham Mount, Dunham Road, Altrincham. Deposit £3 3s., cheques payable to the Board. Tenders by Jan. 26.

\***Arnold, Notts.**—Kerbing, pitching, provision of flagged and tarmacadam surfacings and road drainage gullies on parts of the following adjoining streets for U.D.C.: Somersby Road—approximately 775 lin. ft., 40ft. wide; Littlegreen Road—approximately 309 lin. ft., 40ft. wide; Patterdale Road—approximately 107 lin. ft., 40ft. wide; Arno-Vale Road—approximately 292 lin. ft., 60ft. wide. Documents from the Surveyor to the Council, Arnot Hill House, Arnold. Deposit £2 2s. Tenders by Jan. 16.

\***Bilston, Staffs.**—Bradley Lane South housing site extension (Contract 247), for B.C. Deposit £2 2s. Tenders by Jan. 10.

\***Bishop's Stortford, Herts.**—Making-up of private streets for U.D.C. Deposit £2 2s. Tenders by Jan. 28.

\***Boldon, Dur.**—Making-up of part of Charlotte Crescent and Burnham Grove, East Boldon, for U.D.C. Documents from J. T. Edmondson, surveyor, Council Offices, East Boldon. Deposit £5 5s. Tenders by Feb. 7.

\***Buckinghamshire.**—Roadworks for C.C. Deposit £2. Tenders by Jan. 23.

\***Canterbury.**—Construction of Ring Road (part) and Link Road to A.2 for City Council. Application forms to be returned by Jan. 23.

\***Carmarthenshire.**—Roadworks for C.C. Deposit £2. Tenders by Jan. 16.

\***Carshalton, Surrey.**—Fellows Road depot, surfacing of roads for U.D.C. Tenders by Jan. 25.

\***Chelmsford, Essex.**—Three private street works contracts, as follows, for B.C.: (Contract 1) Bradford Street—provision of approximately 1,840 sq. yd. of lean-mix concrete base with bituminous concrete and bitumen macadam surfacing (contract includes the provision of surface water drainage, footpaths and verges); (2) Oaklea Avenue—shaping-up the existing base over an approximate area of 1,319 sq. yd., and surfacing with bituminous concrete and bitumen macadam (contract includes the provision of surface water drainage, paths and verges); (3) Beach's Drive and Roxwell Avenue—provision of approximately 1,976 sq. yd. of lean-mix concrete base and shaping-up approximately 1,206 sq. yd. of existing base, together with surfacing with bituminous concrete and bitumen macadam (contract includes the provision of footpaths and verges, surface water drainage in Beach's Drive and an 18in. surface water outfall sewer approximately 172yd. in length). Documents from the office of the Borough Engineer, Municipal Offices, Coval Lane, Chelmsford. Deposit £2 2s. Tenders by Jan. 23.

\***Colchester, Essex.**—Following works for B.C.: (a) Surfacing existing carriageways and hardstandings in granite asphalt, 7,230 sq. yd.; (b) breaking-up footpaths, surfacing in granite asphalt, and ancillary works, 500 sq. yd.; (c) surfacing car park in tarmacadam, 2,100 sq. yd. Documents from J. S. Orchard, borough engineer, 1 West Stockwell Street, Colchester. Deposit £2. Tenders by Jan. 23.

\***Cuckfield, Sussex.**—Construction of approximately 430 sq. yd. of concrete footway, 360 lin. yd. of kerbing, 1,200 sq. yd. of tarmac, and other incidental works at Covert Mead. Handcross, contract 151, for R.D.C. Documents from the office of A. Hutchings, engineer and surveyor, Rural Council Offices, Boltro Road, Haywards Heath. Deposit £2 2s. Tenders by Jan. 23.

\***Cwmbran, Mon.**—Making-up of Orchard Place and Approach Road for U.D.C., which includes 245 cu. yd. excavation, 304 lin. yd. kerb, 782 sq. yd. stone and bituminous macadam carriageway, drainage and ancillary works. Documents from the Surveyor, Council Offices, Cwmbran. Deposit £3 3s. Tenders by Jan. 23.

\***Dagenham, Essex.**—Resurfacing Forest Road (Romford Road to Roebuck Road) for B.C., including burning off existing surface (716 sq. yd.), laying 630 tons bituminous concrete, and laying by machine 4,900 sq. yd. by 2in. bituminous macadam wearing course. Documents from the Borough Engineer and Surveyor, Civic Centre, Dagenham. Tenders by Jan. 13.

\***Enniskillen, Fermanagh.**—Reconstruction and realignment of Henry Street and Sligo Road approximately one mile in length, contract 1, for B.C. The work comprises approximately 650 lin. yd. of carriageway and footpath carried on a reinforced concrete and prestressed concrete piles structure; earthworks; 28,000 super. yd. asphalt surfacing, together with footpaths, kerbing, fencing, drainage and other incidental works relating to the scheme. Documents from W. D. R. and R. T. Taggart, consulting engineers, 13 College Gardens, Belfast, 9. Deposit £10 10s. Tenders by Jan. 20.

\***Essex.**—Tarpaving at Chelmsford Moulsham County Secondary School for C.C. The work consists of tarpaving and ancillary works, estimated cost £2,900. Applications to H. Conolly, County Architect, County Hall, Chelmsford, by Jan. 7.

\***Exeter.**—Frog Street bridge reconstruction for City Council. Deposit £2 2s. Tenders by Jan. 31.

\***Failsforth, Lancs.**—Construction of 1,100 lin. yd. of roadworks and 890 lin. yd. of surface water sewer from 6in. to 12in. diameter, and other incidental works at Lord Lane for U.D.C. Documents from the Engineer and Surveyor, Town Hall, Failsforth. Deposit £5. Tenders by Jan. 13.

\***Falmouth, Corn.**—Construction of estate roads, foul and surface water sewers, manholes and ancillary works for Marlborough housing estate, for B.C. Documents from B. J. Sweeney, borough surveyor and water engineer, Municipal Offices, Falmouth. Deposit £3 3s., cheque. Tenders by Feb. 1.

\***Godalming, Surrey.**—Laying of concrete flagged front paths (approximately 1,250 super. yd.) and formation of the necessary steps, to about 134 houses at the Ockford Ridge estate for B.C. Documents from the Borough Engineer and Surveyor, Branksome, Filmer Grove, Godalming. Deposit £1 1s. Tenders by Jan. 12.

\***High Wycombe, Bucks.**—Construction of road and surface water sewer at Barry Lodge, Cressex Road for B.C. Deposit £2 2s. Tenders by Jan. 19.

\***Hinckley, Leics.**—Making-up of (1) Byron Street, Earl Shilton; (2) Brame Road, Hinckley (part); (3) Middlefield Lane, Hinckley (part), for U.D.C., the work to comprise the construction of surface water drains with gullies and connections, kerb-laying and construction of carriageway and footways. Documents from the Surveyor, Argent House, St. Mary's Road, Hinckley. Deposit £1 each street. Tenders by Jan. 27.

\***Hornchurch, Essex.**—Reconstruction of Lambs Lane (part) for U.D.C. Deposit £2 2s. Tenders by Jan. 23.

\***Leicester.**—Northern area development, contracts 1 and 2 for City Council. Deposit £2 2s. each. Tenders by Jan. 30 and Feb. 6.

\***Lincoln.**—Surfacing for City Council Tenders by Jan. 21.

\***Mablethorpe and Sutton, Lincs.**—Preparation of sites for chalets on the sea bank at Bohemia, Sutton-on-Sea, for U.D.C., involving the laying of approximately 450 sq. yd. of concrete paving slabs and 136yd. of polythene water service. Documents from the Council Offices, Mablethorpe. Deposit £1 1s. Tenders by Jan. 11.

\***Macclesfield, Ches.**—Warwick Road extension for B.C. Deposit £2 2s. Tenders by Jan. 23.

\***Nantwich, Ches.**—Road work and the laying of a 12in. sewer in Birchlin Lane, between Mount Drive and Park View, for U.D.C. Documents from E. H. Bailey, engineer and surveyor, Brookfield House, Nantwich. Tenders by Jan. 23.

\***Newcastle-under-Lyme.**—Completion works at private development housing estate off Roe Lane for B.C. Tenders by Jan. 16.

\***Salford, Lancs.**—Private street works for City Council. Tenders by Jan. 10.

\***Southend-on-Sea, Essex.**—Carpeting of existing and new carriageways and incidental works in connection therewith for B.C. Applications to the Borough Engineer and Surveyor, Municipal Offices, Southend, by Jan. 11. Deposit £2.

\***Staffordshire.**—Construction of dual carriageways on a section of Winchester-Preston Trunk Road, A.34, for C.C. Deposit £5. Tenders by Feb. 2.

\***Surrey.**—Making-up of Park Road, Limpsfield, Oxted, for C.C. Tenders by Jan. 21.

\***Westmorland.**—Spraying tar on roads for C.C.

\***West Riding.**—Repairing timber fenders, including pile driving, at Boothferry Bridge, which carries the Widmerpool-Howden trunk road A.614 over the River Ouse near Goole, for C.C. Documents from the County Engineer and Surveyor, County Hall, Wakefield. Deposit £1, cheques payable to West Riding Treasurer. Tenders by Jan. 16.

#### SEWERAGE, SEWAGE AND REFUSE DISPOSAL

\***Aberaeron, Cards.**—Llanarth sewerage and sewage disposal scheme for R.D.C., comprising approximately 2,500yd. of 6in. diameter concrete tubes, asbestos-cement and spun-iron sewers with precast concrete manholes, sewage treatment works consisting of settling tank, dosing chamber, filters, humus tanks, drying beds, sludge well and pump house and other incidental works. Documents from J. Owen Parry and Lewis, consulting engineers, Arcade Chambers, Ammanford, or S. G. D. Evans, clerk to the Council, Council Offices, 1 North Road, Aberaeron. Deposit £5 5s. Tenders by Jan. 24.

\***Aberystwyth, Cards.**—Construction of approximately 70 lin. yd. of 6in. diameter foul sewer together with manholes and ancillary works at Sea View Place for B.C. Documents from the Borough Surveyor and Water Engineer, Park Avenue, Aberystwyth. Tenders by Jan. 30.

\***Aberaeron, Cards.**—Highmead Terrace (Llanbyther) sewerage scheme for R.D.C., comprising approximately 1,000yd. of 6in. diameter concrete tube and asbestos-cement sewers and 150yd. of 4in. diameter spun-iron rising main with concrete ejector chamber and pumping plant complete with other incidental works. Documents from J. Owen Parry and Lewis, consulting engineers, Arcade Chambers, Ammanford, or S. G. D. Evans, clerk to the Council, Council Offices, 1 North Road, Aberaeron. Deposit £5 5s. Tenders by Jan. 24.

\***Beeston and Stapleford, Notts.**—Surface water sewer at Queens Road for U.D.C. Deposit £2 2s. Tenders by Jan. 16.

\***Bilston, Staffs.**—Reconstruction of storm-water sewer at Lavender Grove (Contract 248), for B.C. Deposit £2 2s. Tenders by Jan. 10.

\***Birmingham.**—Inner Ring Road, Section 1, Holloway Circus. Construction of approximately 370 lin. yd. of stoneware pipe foul



water sewer up to 24in. diameter, laid mainly in heading in the vicinity of Suffolk Street and Horse Fair, together with incidental works for City Council. Documents from the Office of Sir Herbert J. Manzoni, city engineer and surveyor, Civic Centre, Birmingham, 1, on and from Jan. 9. Deposit £2 2s. cheque. Tenders by Feb. 1.

**\*Bullington, Oxon.**—Construction of relief sewers at Wheatley and Watlington for R.D.C. Apply by Jan. 28.

**\*Carlisle, Cumb.**—Blackwell relief sewer for City Council. Tenders by Jan. 27.

**Chelmsford, Essex.**—St. John's Road area, surface water drainage, for B.C., including construction of 100 lin. yd. of 30in. diameter sewer, 113 lin. yd. of 24in. diameter sewer, and 42 lin. yd. twin 18in. diameter sewers, together with necessary manholes and incidental works, including the demolition of existing sewers. Documents from the office of the Borough Engineer and Surveyor, Coval Lane, Chelmsford. Deposit £2 2s. Tenders by Jan. 23.

**Dudley, Wores.**—Forest Road flood relief scheme for B.C., comprising excavations for and provision of 50 lin. yd. of 36in. surface water sewer and 70 lin. yd. of open channel. Applications to the Borough Engineer, The Council House, Dudley, Worcestershire, by Jan. 20. Deposit £2 2s.

**Hartismere, Suffolk.**—Following work for R.D.C.: Botesdale—drains, water supplies and the installation of w.c.s to 42 existing houses; Rickinghall Superior—drains, water supplies and the installation of w.c.s to 14 existing houses. Documents from the Engineer and Surveyor, Engineer and Surveyor's Department, Lambeth Street, Eye, Suffolk. Deposit £2 2s. Tenders by Jan. 13.

**Hemel Hempstead, Herts.**—Supply of sewer cleansing equipment for B.C. Documents from A. H. Turner, borough engineer, High Street, Hemel Hempstead. Tenders by Jan. 9.

**Hillsborough, Down.**—Electrical installation in connection with the erection of a sewage disposal works at Newtownbreda for R.D.C. Documents from McCandless and Barton, consulting engineers, 6 Murray Street, Belfast, 1. Deposit £3 3s. Tenders by Jan. 9.

**King's Lynn, Norfolk.**—Re-laying part of the Saddlebow Road sewer for B.C. Documents from H. G. Ridler, borough engineer, Clifton House, 17 Queen Street, King's Lynn. Deposit £2 2s. Tenders by Jan. 20.

**Lurgan, Armagh.**—Supplying and laying of approximately 330 lin. yd. of 12in. diameter and 470 lin. yd. of 9in. diameter fireclay pipes together with other ancillary works for B.C. Documents from the Borough Surveyor's Office, 6 Union Street, Lurgan, or at the offices of W. D. R. and R. T. Taggart, consulting engineers, 13 College Gardens, Belfast, 9. Deposit £5 5s. Tenders by Jan. 16.

**Malton, Yorks.**—Construction of the following for R.D.C.: 2,500yd. of 6in. diameter s.g.w. or concrete tube sewer; 500yd. of 4in. and 6in. s.g.w. pipe in house connections; two sludge drying beds, in the village of Bulmer, together with the construction of manholes and other ancillary works. Documents from Thomas Hicks, clerk to the Council, R.D.C. Offices, Welham Road, Norton, Malton, Yorks. Deposit £2 2s. Plans also seen at the office of D. H. Moore, consulting engineer, 12 Valley Bridge Parade, Scarborough. Tenders by Jan. 19.

**\*New Forest, Hants.**—Sludge digestion tanks at Ashurst Bridge sewage works for R.D.C. Deposit £5 5s. Tenders by Feb. 13.

**Salford, Lancs.**—Sewage disposal works—construction of supply-line to filters for City Council, which consists of the construction of 36yd. of reinforced concrete channel and 60yd. of concrete and asbestos pipework. Documents from the City Engineer and Surveyor's Office, Town Hall, Salford, 3. Tenders by Jan. 9.

**\*Southam, War.**—Farnborough sewerage for R.D.C. Deposit £5 5s. Tenders by Feb. 6.

**Stirlingshire.**—Construction of sewage purification works at Balfron for C.C. Documents from Crouch and Hogg, engineers, 18 Woodside Crescent, Glasgow, C.3. Deposit £5 5s. Tenders by Jan. 24.

**Uppingham, Rutland.**—Construction of a pumping station, together with the laying of approximately 1,800yd. of 6in. diameter sewer, 1,800yd. of 4in. diameter pumping main and ancillary works mainly in Caldecott Village, for R.D.C. Documents from the offices of Pick, Everard, Keay and Gimson, engineers, 6 Millstone Lane, Leicester. Deposit £5 5s. Tenders by Jan. 21.

#### STREET LIGHTING

**Carmarthen.**—Removal of the existing street lighting units and the supply and erection of a group "A" street lighting installation comprising 109 140-watt sodium lighting units complete with steel columns at the western section of the trunk road A.40

and Llanstephan Road B.4312, for B.C. Documents from the Borough Engineer and Surveyor, Municipal Offices, John Street, Carmarthen. Deposit £2 2s. Tenders by Jan. 23.

**Chelmsford, Essex.**—Provision and erection of group A street lighting columns and lanterns, trunk road A12, White Horse public-house to Wood Street roundabout for B.C., including the supply and erection of 24 35ft. mounting height steel columns and 200-W linear discharge sodium lanterns, and ancillary works. Documents from the Borough Engineer and Surveyor, Municipal Offices, Coval Lane, Chelmsford. Deposit £1 1s. Tenders by Jan. 23.

**Doncaster, Yorks.**—Supply and installation of a total of 97 street lighting units located as follows for R.D.C.: (i) Forty-four units on route A.1 (Great North Road), Rossington Bridge; (ii) 53 units on route A.18 (Thorne Road), Edenthorpe. Each lighting unit will consist of a totally enclosed lantern equipped with a 140-watt sodium lamp, mounted on a 25ft. pre-stressed concrete column, together with all necessary auxiliary equipment. Documents from the Surveyor, Council Offices, Nether Hall, Doncaster. Tenders by Jan. 13.

**Frimley and Camberley, Surrey.**—Supply of the following for U.D.C.: (a) Approximately 90 Group A concrete street lighting columns; and/or (b) approximately 280 140-watt sodium lamps and lanterns and control gear for same. The Council does not bind itself to accept the lowest or any tender. Tenders in plain sealed envelopes to K. S. Harvey, clerk of the Council, Municipal Buildings, London Road, Camberley, by first post, Jan. 21.

**Otley, Yorks.**—Installation of group A lighting for U.D.C., including supply and erection of 95 plain tubular steel lighting columns and brackets, totally enclosed side entry lanterns, lamps, ancillary control gear and wiring for 400-W colour-corrected mercury fluorescent lighting in Otley along 1.8 miles of the Liverpool-Preston-Leeds trunk road A660. Documents from the office of the Engineer and Surveyor, North Parade, Otley. Deposit £1 1s. Tenders by Jan. 28.

**\*Port Talbot, Glam.**—Street lighting schemes for B.C. Tenders by Jan. 20.

**Stoke-on-Trent, Staffs.**—Installation of a system of mercury vapour discharge lighting. The work consists of the supply, erection and wiring of 30 25ft. concrete columns complete with lanterns and accessories for a class "A" installation for City Council. Documents from the City Engineer and Surveyor, Town Hall, Stoke-on-Trent. Deposit £2. Tenders by Jan. 11.

**West Lothian.**—Street lighting on trunk road A.8 in the vicinity of Bangour Hospital, for C.C., including supply and erection of 25 200-watt "long" type, enclosed side entry sodium lanterns mounted at 33ft. on tubular steel columns having an outreach of 10ft. 6in. Documents from the County Electrical Manager, 212 High Street, Linlithgow, West Lothian. Tenders by Jan. 14.

#### INTERNATIONAL CONTRACTS

**Trinidad, W.I.**—The Trinidad and Tobago Electricity Commission intend to make substantial extensions to the existing power station in Port-of-Spain. The civil engineering works will be executed by a fixed rate type contract and it is expected that the works will begin in the first half of 1961. The major civil engineering works will include: (1) Steel framed structure; (2) foundations for buildings, boilers and turbo alternators; (3) cooling water culverts and drain; (4) pumping station; (5) associated and miscellaneous building work. The approximate estimated cost of these works is W.I. \$5 million (W.I. \$4.80=£1). Application for registration forms to Howard Humphreys and Sons, consulting engineers, Standard Life Building, 1 Edward Street, Port-of-Spain, or to their London Office, 8 Francis Street, Westminster, London, S.W.1. The closing date for the issue of registration forms is Jan. 21. Forms to be returned to Trinidad by Feb. 4.

**\*West Pakistan.**—Indus Basin project for Water and Power Development Authority. Apply by Jan. 16.

#### AWARDS

##### BUILDING AND DECORATING (See also Housing Schemes)

**Amersham, Bucks.**—Erection of showroom, garage and petrol filling station at Little Chalfont for Munn and Chapman, Ltd.—

E. S. Gates, Ltd., Chalfont Station Road, Amersham.

**Aycliffe, Dur.**—Erection of agricultural depot for Teesside Farmers, Ltd., King Street, Darlington—T. Willoughby, Old Grammar School, Northallerton.

**Basingstoke, Hants.**—Erection of 16 garages and re-erection of 16 garages at Norden Close, South View, for B.C.—F. Hedderley and Sons, Alexandra Road, Basingstoke, £4,297 (recommended).

**Belfast.**—Erection of single-storey assembly hall and stores at Model Secondary School for Girls, Dunkeld Gardens, for City Council—Wm. Grace and Co., 135-141 Tompkins Avenue, Belfast.

**Belfast.**—Erection of servery at St. Peter's Voluntary Primary School, Raglan Street, for City Council—P. J. Walls and Bros., Sainfield Road, Carryduff.

**Buckinghamshire.**—Construction of Amersham Girls' Grammar School and Chalfont St. Peter Infants' School, for C.C. F. B. Pooley, county architect—E. S. Gates, Ltd., Chalfont Station Road, Amersham.

**Caernarvonshire.**—Erection of additional laboratory at Bangor Girls' Grammar School for C.C.—Henry Joseph McGinn, 13 Sholing Drive, Rhyl, £10,483.

**Christchurch, Hants.**—Construction of one block of public conveniences at Mudeford Beach, Mudeford, for B.C. Matthews and Whatley, Ltd., Gordon Road, Highcliffe, Christchurch, £1,559. Work commencing Feb. 1.

**Darlington, Dur.**—Erection of hall at the Barnard Special School for E.C. E. A. Tornbohm, borough architect—George Dougill and Son, Chestnut Street, Darlington, £9,564.

**Daventry, Northants.**—Erection of one block, comprising four shops and four maisonnettes for B.C.—J. E. Lucas, Ltd., Moulton, Northampton, £19,827 (recommended, subject to Ministry approval).

**Durham.**—Further additions to Neville's Cross Training College for C.C. G. W. Gelson, county architect—Crudens, Ltd., Musselburgh, Midlothian, £134,000 (extension to existing contract).

**Enfield, Middx.**—Erection of offices at South Street for the United Flexible Metallic Tubing Co., Ltd.—W. T. Yates, 193 Great Cambridge Road, Enfield, estimated cost £80,000. Daniel Watney, Eiloart Inman and Nunn, architects, The Charterhouse, Charterhouse Square, London, E.C.1, and Baker Mallet and Partners quantity surveyors, Grosvenor Gardens House, Grosvenor Gardens, London, S.W.1. Work commencing this month.

**Gateshead, Dur.**—General building work in connection with large new factory at Team Valley trading estate for Smith's Delivery Vehicles, Ltd.—Leslie and Co., Woodland Road, Darlington.

**Harwich, Essex.**—External painting of (a) 136 houses and flats and (b) 62 houses and flats on various estates and corporate properties for B.C.—W. Fyfe, 51 Birch Avenue, Dovercourt, £1,909, and A. Smith and Sons, Ltd., Alexandra Road, Harwich, £529 (recommended).

**Hendon, Middx.**—Erection of 22 garages at Bedford Road, Moat Mount housing estate, Mill Hill: 48 at Goldsmiths Avenue, Kingsbury Road, N.W.9, 10 at Saffron Close, Finchley Road, N.W.11, and six at Frith Court, Abercorn Road, N.W.7, for B.C.—T. and A. C. Hunt and Son, 60 Chase Side, Enfield, Middx., £19,510 (recommended).

**Hull.**—Erection of six shops and maisonnettes, with 12 garages, Boothferry estate, and a junior department at Bethune Avenue Primary School for City Council—T. Wright and Son (Hull), Ltd., 57 Regent Street, Hull, and Stepany Contractors, Ltd., Grovehill, Beverley.

**Ilford, Essex.**—Structural works for shops and office block at Ilford Broadway redevelopment for B.C.—J. Murphy and Sons, Ltd., 43 Charteris Road, Finsbury Park, N.4, £56,301 (accepted); Richard Costain, Ltd., £63,877; W. and C. French, Ltd., £63,448; Hammond and Miles, Ltd., £60,600.

**Islington.**—Erection of a neuro-surgical unit and work to existing medical block at Whittington Hospital, London, N.19, for North West Metropolitan Regional Hospital Board—Kyle-Stewart (Contractors), Ltd., Wembley Park Drive, Middx. Estimated cost £100,000.

**Keighley, Yorks.**—Reorganisation of house-craft room at Highfield Secondary School for B.C. E. G. Felgate, borough architect—J. Garnett (Plumber), Ltd., 199 West Lane, Keighley.

**Kingston-upon-Thames, Surrey.**—Following for B.C.: Rebuilding of the original paper baling shed—W. H. Gaze and Sons, 19 High Street, Kingston-upon-Thames, £1,575; Works at Villiers Road depot for B.C.—Rybon (Contractors), Ltd., 42 Villiers Road,



- Kingston-upon-Thames, £4,180 (recommended).
- Conversion works at 22 Gloucester Road—W. H. Streeter, Ltd., 10 Tudor Road, Hampton, Middx., £3,189 (recommended, subject to Ministry approval).
- Luton, Beds.**—Erection of the new church of St. Hugh in the Lewsey Farm area for St. Albans Diocesan Board of Finance. H. A. Rolls, architect, 15 Bridge Street, Leighton Buzzard—Johnson Fuller, Ltd., West Street, Dunstable. Estimated cost £7,911. Work about to commence.
- Maidenhead, Berks.**—(a) Provision of main doors, and (b) joinery and plasterwork required on main doors in the Council chamber of the new Municipal Buildings for B.C.—(a) Victoria Joinery Co., Preston Street, Leicester, £11,387; and (b) Green and Vardy, 79 Essex Road, London, N.1, £9,304 (recommended, subject to Ministry approval).
- Mansfield, Notts.**—Erection of 10 brick garages at the junction of Reindeer Street and Southwell Road for B.C.—Direct Labour, £1,400 (recommended).
- Middlesbrough, Yorks.**—Erection of two control buildings for up yard and down yard control, respectively, at Newport Marshalling Yard near Middlesbrough for British Railways (North Eastern Division)—T.G. Construction Co., Ltd., Bowesfield Lane, Stockton-on-Tees, Dur. Estimated cost £75,000.
- Newcastle upon Tyne.**—Construction of clinic, garages, duty room, and one block of flats on the Kenton estate for City Council. G. Kenton, city architect—Urban Construction Co. (Newcastle), Ltd., 38 Side, Newcastle upon Tyne, £21,711.
- Newcastle upon Tyne.**—Conversion of the Lyric Cinema, Heaton, into art centre for the People's Theatre, Newcastle. Cackett, Burns Dick and MacKellar, architects, 21 Ellison Place, Newcastle—Ralph Bowey and Son, William Street South, Gosforth, Northumberland.
- Northallerton, Yorks.**—Extension to nurses' home at Friarage Hospital for the Newcastle Regional Hospital Board—Walter Thompson (Contractors), Ltd., North End, Northallerton, £47,868. Mortimer Partners, architects, Ainderby Hall, Northallerton, and Thos. Barrett, Sons and Partners, quantity surveyors, 84 Grange Road, Middlesbrough.
- Petersfield, Hants.**—Erection of a block of eight precast concrete garages, together with the concrete base, handstanding and drive-in on the Merchistoun estate, Horn-dean, for R.D.C. N. P. Scott, engineer and surveyor—Powell and Lillywhite, Ltd., Rowlands Castle Road, Horn-dean, Portsmouth, £1,179. Work commencing Jan. 31.
- Reading, Berks.**—Erection of offices, telephone exchange, etc., at Reading Station for British Railways (Western Region)—Anglo Scottish Construction Co., Ltd., 112a Coombe Lane, London, S.W.20, £90,000.
- St. Albans, Herts.**—Following for City Council: Public conveniences at Cattle Market and White Hart Yard, and additions to toilets at Market Hall—Cockcroft and Preece, Ltd., 223a Hatfield Road, St. Albans, £1,873, £2,038 and £1,868, respectively; repair and improvements at Pemberton Buildings—A. R. Brinsden, Ltd., 20 Ladysmith Road, St. Albans, £4,764 (recommended).
- St. Marylebone.**—Erection of an overseas students' centre, for the British Council, and flats, at 11, 11a and 11b Portland Place, London, W.1. Clifford Culpin and Partners, architects, 39 Doughty Street, London, W.C.1—John Laing and Son, Ltd., London, N.W.7.
- Seaton Valley, Northumb.**—Fireplace conversions in houses on the Westbourne estate for U.D.C.—George Pearson, West Monkseaton, £23,063.
- Shoreditch.**—Conversion works to properties, as follows for B.C.: 10 Broke Road, 136 Broke Road and 61 Pownall Road—County Contracting Co., Ltd., 1 Station Approach, London, S.E.6, £8,383; 30 Broke Road and 120 Broke Road—Turnbull and Son, Ltd., 9 Northumberland Alley, London, E.C.3, £6,278 (both recommended).
- Shrewsbury, Salop.**—Erection of five-storey office block at Chester Street/Cross Street junction, for British Railways (Western Region). R. L. Moorcroft, architect, Western Region—Wilson, Lovatt and Sons, Ltd., Clarence Street, Wolverhampton. Site works commencing this month.
- Southampton.**—Following for B.C.: Erection of new College of Technology and new workshop block and alterations for conversion to boys' school, Millbrook Secondary School—A. J. Dunning and Son (Weyhill), Ltd., Weyhill, Andover, £539,307, and A. E. Jukes and Son, Ltd., 40-60 King Georges Avenue, Southampton, £39,988 (recommended, subject to reductions as may be required by M.E.).
- External redecorations at Wimpson Junior School—P. J. Hartel (Southern), Ltd., 10 Cumberland Place, Southampton, £1,032 (recommended).
- South Ruislip, Middx.**—Erection of offices and stores for Kodak, Ltd.—Kirk and Kirk, Ltd., Atlas Works, 287 Upper Richmond Road, London, S.W.15, £643,000. Work commenced.
- Stevenage, Herts.**—Erection of The March Hare public-house for Harrington and Co., Ltd.—Howard Farrow, Ltd., Highfield Road, Golders Green Road, London, N.W.11, estimated cost £25,000. E. G. Fracklow, architect, 86 Fenchurch Street, London, E.C.3, and P. J. D. Mitchell, staff surveyor.
- Stoke Newington.**—Erection of public laundry and maisonnettes at Milton Grove (West) site for B.C.—Thomas and Edge, Ltd., 52 Macbean Street, London, S.E.18, £94,072 (recommended, subject to Ministry approval).
- Stoke-on-Trent, Staffs.**—Construction of a catering and food technology department at the North Staffordshire Technical College, for E.C.—Direct Labour.
- Stourbridge, Worcs.**—General building repairs and painting to various properties consisting of farm buildings, cottages, pumping stations, disposal works, etc., throughout the district for the Upper Stour Valley Main Sewerage Board—Main Decorators, Market Street, Stourbridge, £4,709. Work about to commence.
- Stourbridge, Worcs.**—Repainting of 347 houses and flats at Norton estate during 1961-62 for B.C.—Direct Labour (recommended).
- Tynemouth, Northumb.**—Improvements to toilets at the Western Junior Mixed and Infants' School for E.C. J. G. Cowe and Son, architects, Claremont Chambers, Claremont Place, Newcastle upon Tyne—S. Storer, Reed Street, North Shields, £15,000 (subject to M.E. approval).
- Walthamstow, Essex.**—Following for B.C.: Erection of block of five garages and incidental site work at Hollywood Way and Hale End Road—J. Hyde and Co., 669 Lea Bridge Road, Leyton, London, E.10, £979; (a) 10 lock-up garages at Hoxton Manor Sports Ground, and (b) conversion and repair of 10 Bisterne Avenue—Direct Labour, (a) £2,679 and (b) £1,750 (recommended, subject to Ministry approval).
- Supply of terrazzo flooring, wall linings and partitions for the erection of public conveniences at Willow Walk—Marriott and Price, Ltd., 16 Corporation Street, London, N.7, £1,401; design, supply and erection of a prestressed concrete frame for new buildings at Soneydown Junior Mixed School—Concrete, Ltd., Green Lane, Hounslow, Middx., £16,000; (a) fittings to library and science laboratories (part), etc., at Sidney Burnell Secondary School, and (b) fittings at Wm. McGuffie Secondary School—H. C. Horswill, Ltd., 182 Green Street, London, E.7, (a) £1,826 and (b) £1,479 (recommended).
- Wandsworth.**—Sixteen garages on Notre Dame estate for B.C.—T. Peyton and Sons, Ltd., 326 Garratt Lane, London, S.W.18, £4,443 (recommended); H. C. Smith (Builders), Ltd., £4,455; C. Ash and Son, Ltd., £4,495; Tamworth Park Construction Co., Ltd., £4,709; Anglo-Scottish Construction Co., Ltd., £5,098; J. Garrett and Son, Ltd., £5,297; Whyatt (Builders), Ltd., £5,577; Allard and Saunders, Ltd., £5,648.
- Welshpool, Monts.**—Erection of a youth centre for C.C.—D. T. Jones, Powells Lane, Welshpool, £15,581.
- West Midlands.**—Construction of explosives store, oil and cement stores, weighbridge house, wharf amenities, etc., at Wolstanton Colliery for the National Coal Board, West Midlands Division. W. A. Woodland, divisional architect—Sir Alfred McAlpine and Son, Ltd., 49 Waterloo Road, Wolverhampton.
- Westminster.**—Erection of a new Junior Carlton Club at Carlton House Terrace and Waterloo Gardens, London, S.W.1—John Laing and Son, Ltd., London, N.W.7.
- Westminster.**—Reconstruction of Greycoat House, Greycoat Place, London, S.W.1, for Greycoat Place Investment Co., Ltd.—Howard Farrow, Ltd., Highfield Road, Golders Green Road, London, N.W.11. Oscar Garry and Partners, architects, 66 Gloucester Place, W.1. E. D. C. Ltd., consultants, Ardshiel House, Empire Way, Wembley, Middx.
- Willesden, Middx.**—Following for B.C.: Replacing the lead roof at Wesley Secondary School by Nurfelt—L. Carter and Son, Ltd., 23 Crisp Road, London, W.6, £1,202; internal redecorations at Aylestone School—William Moss and Sons, North Circular Road, London, N.W.2, £3,040; provision of pressure piles in the foundations of new office block—McKinney Foundations, Ltd., Manor Way, Boreham Wood, Herts., £6,120 (all recommended).

## CLOTHING AND TEXTILES

**Southampton.**—Supply of uniforms (water-works employees) for B.C.: Forty-six uniform suits and 49 overcoats—Emeralda, Ltd., Cardiff, £10 7s. 6½d. each and £6 12s. 10d. each, respectively; 36 mackintoshes—L. Andrew and Co., Ltd., Manchester, £4 14s. 1d. each; 90 caps—Miller, Rayner and Haysom, Ltd., Southampton, 17s. each (recommended).

## DEMOLITION

- Hammersmith.**—Demolition of properties at 17, 19, 21 and 23 Latimer Road for B.C.—London Demolition Co., Ltd., 577 London Road, Isleworth, Middx., £140 (recommended); Gowing and Pursey, Ltd., £225; T. E. Scudder, Ltd., £230; George E. Cloke, Ltd., £288.
- Ilkerton, Derbys.**—Demolition of (a) Manor House, and (b) 9, 10, 11, 12 and 13 Rutland Terrace and outbuildings for B.C.—(a) Allan Sisson, Cossall, £50; and (b) T. W. Binder, Long Eaton, £50 (recommended).
- Maidenhead, Berks.**—Demolition of 34-80, 61-87 and 109-131 Reform Road, and miscellaneous buildings for B.C.—James (Transport), Ltd., Slough, Bucks., to pay Council £100 (recommended).
- Sheffield.**—Demolition of 74-84 and 2-3 in Court 12 Boston Street and property in Button Lane, Carver Street, Bradwell Lane and Backfields for City Council—S. Williams, 462 Coleridge Road, Sheffield, 9, £175 and £450, respectively.
- Stoke-on-Trent, Staffs.**—Demolition of the following for City Council: The Crystal Palace, America Street, Tunstall—Parkhall Demolition Co., Tunstall, Stoke-on-Trent, £56; the Vauxhall Tavern, 28 Normacot Road, Longton—Potteries Demolition Co., Ltd., 143 Etruria Road, Stoke-on-Trent, £71 (recommended).
- Stourbridge, Worcs.**—Demolition of buildings on corner of Hayes Lane and The Hayes for B.C.—F. G. Davis, Wombourn, near Wolverhampton, £150 (recommended).

## ELECTRICAL

- Barking, Essex.**—Supplying and fixing lifts at Linton Road Church Road redevelopment and Mayesbrook Meadow (contract 2) for B.C.—Otis Elevator Co., Ltd., Falmouth Road, London, S.E.1, £43,782 and £7,404, respectively.
- Basingstoke, Hants.**—Electrical installation for alterations and extensions to Corporation depot for B.C.—R. H. Foster, 16 Essex Road, Basingstoke, £1,297 (recommended).
- C.E.G.B.**—The Central Electricity Generating Board have placed contracts during the past month for power stations, transmission lines and transforming stations amounting in the aggregate to approximately £13,400,000. The principal contracts include:
- Blyth B power station: two 350-MW turbo-generators, feed water heating plants, boiler feed pumps and auxiliaries—English Electric Co., Ltd.; 415-V switchgear, contactors and accessories—M. and C. Switchgear, Ltd.
- Thorpe Marsh power station (near Doncaster): high-pressure pipe-work and valves for generator 1 and boiler 1—Aiton and Co., Ltd.
- Rugeley power station: auxiliary control and instrument cables and accessories—N. G. Bailey and Co., Ltd.
- Oldbury power station: site access road improvements—Gloucestershire County Council.
- Hams Hall A power station: 15-MW Olympus powered gas turbine generating plant—Bristol Siddeley Engines, Ltd.
- Drakelow C power station: main foundations—J. L. Kier and Co., Ltd.; circulating water pumps—Drysdale and Co., Ltd.; circulating water valves for sets 9 and 10—Guest and Chimes, Ltd.; circulating water valves—J. Blakeborough and Sons, Ltd.; coal-handling plant—International Combustion Products, Ltd.; high pressure pipework and valves for units 9 and 10—Babcock and Wilcox, Ltd.
- Staythorpe B power station: cooling tower 2—Davenport Engineering Co., Ltd.
- West Thurrock power station: generator transformers 3 and 4—Associated Electrical Industries, Ltd.; reinforced concrete coal reclaim bunkers—Bierrum and Partners, Ltd.; mobile coal-handling plant for units 1 and 2—John Blackwood Hodge and Co., Ltd.
- Richborough power station: surfacing of coal store area—J. L. Kier and Co., Ltd.
- Bankside power station: flue gas-washing plant—Head Wrightson Processes, Ltd.
- Paddington sub-station: two 66/22-kV, 45-MVA transformers—Ferranti, Ltd.
- Brimdown sub-station: 33-kV switchgear modifications—Associated Electrical Industries, Ltd.
- Carrington sub-station: 132-kV air blast switchgear—Associated Electrical Industries, Ltd.

Lancaster sub-station: two 132/33-kV, 45-MVA transformers and auxiliaries—C. A. Parsons and Co., Ltd.

Corby sub-station: 275-kV switchgear—Associated Electrical Industries, Ltd.; 132-kV switchgear—General Electric Co., Ltd.

Taunton sub-station: 132-kV switchgear—Associated Electrical Industries, Ltd.

Skelton Grange B power station: 132-kV switchgear—Associated Electrical Industries, Ltd.

Whitson sub-station: 33-kV switchgear—A. Reyrolle and Co., Ltd.

Harker-Penwortham: second circuit 275-kV overhead line—Watshams, Ltd.

Sundon sub-station: 132-kV cables—Pirelli-General Cable Works, Ltd.

**Heston and Isleworth, Middx.**—Re-wiring and the installation of two power points in 102 and 105 houses on the Worple estate for B.C.—Hughes Electrical, Ltd., 8 St. John's Road, St. John's, Woking, Surrey, £1,858 and £1,910, respectively (recommended).

**Hull.**—Electrical installation to 132 dwellings, Boothferry estate for City Council—J. B. Kilvington, Ltd., 376 Anlaby Road, Hull.

#### FENCING

**High Wycombe, Bucks.**—Renewal of front gates and fences to 38 houses at Bowerdean Road, and gates and posts to 291 houses at Spearing Road for B.C.—E. Devers, New Bungalow, Little Lane, Loosely Row, Aylesbury, £1,198, and J. B. Corrie (Flexella), Ltd., Frenchman Road, Petersfield, Hants, £2,014, respectively (recommended).

**Southall, Middx.**—Repair of fencing for B.C.—A. Monk, South Harrow, £403 (recommended).

#### GAS AND WATER SUPPLY

**Forehoe and Henstead, Norfolk.**—Provision and laying of about 12,000 yd. of 4 in. and 3 in. diameter spun-iron pipe water mains at Barnham Broom, etc. for R.D.C. Elliott and Brown, consulting engineers, Stanley House, Pelham Road, Nottingham—M. Dye, Rectory Lane, Chedgrave, Loddon, Norfolk, £23,302 (accepted); Thos. Carey and Son, Ltd., £26,176; E. J. Edwards (Norwich), Ltd., £27,241; A. J. Holloway, Ltd., £23,691; Edward Thompson, Ltd., £24,323; W. G. Johnson, £24,922; R. and C. T. Whitehead, £24,639; Cubitt and Gotts, Ltd., £28,711; Biggs, Wall and Co., £28,022; J. Cooper (Construction), Ltd., £26,295. Work commencing this month.

**Mansfield, Notts.**—Construction of a new trunk main from Berry Hill Lane to Belvedere Street for B.C.—Direct Labour (recommended). Estimated cost £64,500.

**Southampton.**—Provision of pipes and special castings for the Lyndhurst reservoir No. 2 scheme for B.C.—Clay Cross Co., Ltd., Chesterfield, £4,250 (recommended).

**Tynemouth, Northumb.**—Construction of nearly five miles of 12 in. water main from Hebron Reservoir to Pegswood, Ashington, and Newbiggin for B.C.—Direct Labour, £50,000.

#### HEATING AND VENTILATING

**Basingstoke, Hants.**—Ventilation and oil-fired heating installation for alterations and extensions to Corporation depot for B.C.—F. W. Cook and Co. (Southampton), Ltd., 21-24 The Strand, Southampton, £1,960 (recommended).

**Dagenham, Essex.**—Provision of oil-fired heating apparatus at Rectory Road Old People's Centre for B.C.: Mumford Bailey and Preston, Ltd., 147 Farringdon Road, London, E.C.1, £1,006 (recommended).

#### HOUSING SCHEMES

**Aylesbury, Bucks.**—Five hundred and three dwellings and roads and sewers on an estate off Bicester Road for B.C.—George Wimpey and Co., Ltd., Hammersmith Grove, London, W.6 (subject to Ministry approval). Estimated cost £912,555. Work commencing next spring.

**Barking, Essex.**—Following for B.C.: Provision of precast concrete floors and stairs at Mayesbrook Meadow redevelopment—Concrete (Southern), Ltd., Green Lane, Hounslow, Middx., £1,418 (recommended).

Nine-storey block of flats at Hepworth Gardens and Southold Drive—Direct Labour (recommended). Estimated cost £80,424.

**Basingstoke, Hants.**—Following at South Ham housing estate for B.C.: Group B, 42 houses and 43 garages, and Group C, 45 houses and 44 garages, 32nd instalment—Mussellwhite and Son, Eastport Works, Basingstoke, £93,625, and H. N. Edwards and Partners, Ltd., 21 Brook Street, Basingstoke, £99,800, respectively; three bungalows and 25

garages, 39th instalment—Tigwell and Stephens, Ltd., Wote Street, Basingstoke, £10,799 (recommended, subject to Ministry approval).

**Bedlington, Northumb.**—Sixteen flats at Cornwall Crescent for U.D.C.—A. K. Dennis, surveyor—Direct Labour, £19,624.

**Bicester, Oxon.**—Seventy-four Homeville traditional houses and flats at western development site for U.D.C.—F. J. Minns and Co., Ltd., 67 St. Aldgates, Oxford.

**Braintree and Bocking, Essex.**—Eight Homeville traditional bungalows at Bocking Church Street for U.D.C.—Tanner and Wicks, High Garrett, Braintree.

**Cranbrook, Kent.**—Fourteen flatlets at Red Oak, Hawkhurst, and 18 houses at Clayhill, Goudhurst, for R.D.C.—W. Ellis (Etchingam), Ltd., High Street, Etchingam, Sussex, £21,922 and £40,800, respectively.

**Cuckfield, Sussex.**—Twenty-eight dwellings at Crawley Down (contract 149) for R.D.C.—A. Hutchings, engineer and surveyor—Orchard and Peer, Ltd., 32 Leopold Road, Wimbledon, S.W.19, £70,760. Work commencing this month.

**Darlington, Dur.**—Forty-four houses on the Firth Moor estate for B.C.—E. A. Tornbohm, borough architect—Direct Labour, £66,764 (recommended).

**Daventry, War.**—Following for R.D.C.: Two bungalows at Chapel Lane, Flore—F. J. C. Leatherland, Weedon, Northants., £2,762 (accepted); Adkins and Cooper, Ltd., £2,858; Haynes and Sons, Ltd., £2,909; R. Quelch, £2,969.

Two bungalows at Dodford—F. J. C. Leatherland, £2,911 (accepted); Haynes and Sons, Ltd., £3,041; Adkins and Cooper, Ltd., £3,090; C. H. Quelch, £3,118. Work commencing March.

**Ely, Cambs.**—Erection of seven bungalows and the demolition of 49 Silver Street for U.D.C.—John G. Shilton, engineer and surveyor—C. Devine, 60 Cambridge Road, Ely, £6,545 (accepted); J. H. Cross and Son, £7,594. Work commencing February.

**Godalming, Surrey.**—Aged persons' bungalows at Green Lane estate for B.C.—Jackson and Gocher, Ltd., Cleveland Place, Farncombe, Godalming, £23,590 (recommended).

**Hackney.**—Following for B.C.: Eighty flats, 12 lock-up garages and four lock-up shops at Kenninghall Road (No. 3) scheme—Direct Labour, estimated total cost £333,900; 14 dwellings and one lock-up garage at Valentine Road site—Direct Labour, estimated total cost £50,050 (both recommended).

**Hay, Brecons.**—Ten Homeville traditional houses at Bronllys site for R.D.C.—F. B. May, Kingston, Heres.

**Hemel Hempstead, Herts.**—Fifty-five flats, eight houses and 38 garages and ancillary works at Warners End for Development Corporation. Peter Dunham, Widdup and Harrison, architects, 14 Stephyns Chambers, Bank Court, Hemel Hempstead—E. S. Gatts, Ltd., Chalfont Station Road, Amersham, Bucks.

**Hetton, Dur.**—Eight bungalows for U.D.C.—Direct Labour, £9,300.

**Hucknall, Notts.**—One hundred and fifty houses and flats at Welbeck housing estate, contract 2, for U.D.C.—A. S. Martin, engineer and surveyor—Fleet Bros., Ltd., 72-74 Newgate Lane, Mansfield. Work to commence shortly.

**Hull.**—Following for City Council. A. Rankine, city architect: 84 dwellings and 27 garages, Boothferry estate—Stepney Contractors, Ltd., Grovehill, Beverley, East Yorks. (subject to Ministry approval).

Fifty-four dwellings and eight garages, Greenwood Avenue-Endike Lane—Direct Labour.

**Kiveton, Yorks.**—Fifty-six traditional houses and roadworks, Red Hill site for R.D.C.—B. D. Thompson, architect, 102 Bridge Street, Worksop—J. E. Smith (Worksop), Ltd., Worksop, £92,136 (accepted); Ackroyd and Abbott, Ltd., £100,843; J. H. and W. E. Ilett, Ltd., £96,712; D. and N. Brown (Builders), Ltd., £93,050; Robt. Harrison Sons, Ltd., £94,772.

**Lowestoft, Suffolk.**—(a) 24 flatlets and four one-bedroom flats for old people, and (b) nine houses at Hollingsworth Road, Gunton estate, for B.C.—J. Gaze and Sons, Ltd., Kimberley Road, Lowestoft, (a) £42,699 and (b) £19,260 (recommended, subject to Ministry approval).

**Mitcham, Surrey.**—Following for B.C.: 68 maisonnettes, 68 flats and 21 houses, stage 1, Phipps Bridge redevelopment scheme (contract 4)—A. A. Stuart and Sons (Contractors), Ltd., £495,999, less £7,310.

Tenders received for conversion of "Sibford" Lower Green West, to provide 24 flats and a common room for old people, new boiler room and contingent works—Humphreys, Ltd., £35,865; H. F. Meech (Builders), Ltd., £35,899; A. J. Wait and Co., Ltd., £36,463; C. Ash and Son, Ltd., £37,000; Downs Estates, Ltd., £37,154; S. Graham

Smith (Builders), Ltd., £37,750; Williams Bros. (Carshalton), Ltd., £38,465; H. C. Smith (Builders), Ltd., £39,257.

Tenders received for conversion of "Little Glebelands," Love Lane, to provide 13 old people's flats, a warden's flat and contingent works—H. C. Smith (Builders), Ltd., £24,173; A. J. Wait and Co., Ltd., £24,210; Downs Estates, Ltd., £24,214; Williams Bros. (Carshalton), Ltd., £24,753; C. Ash and Son, Ltd., £24,850.

**Oswaldtwistle, Lancs.**—Sixty-eight houses and bungalows as the first part of an estate at the Cabin End Farm, Knuzden, for U.D.C.—Drury Estates, Ltd., Leicester. Work commencing this month.

**Oundle and Thrapston, Northants.**—Following for R.D.C. Siteworks including construction of carriageway and laying of general services entailing the construction of septic tank, the erection of first instalment of 20 dwellings and suite of nine lock-up garages at Collyweston. H. G. Kenyon, architect—Henry J. Firman, Ltd., Newark Road, Peterborough, £40,610. Work commencing Feb. 1.

**Penzance, Corn.**—Thirty two-bedroom flats, nine one-bedroom flats and 31 bed-sitters at St. Clare Street area for B.C.—Venn Bros. (Cornwall), Penzance, £115,128 (subject to Ministry approval).

**Reigate, Surrey.**—Twelve four-storey maisonnettes and two old people's bungalows, 14 stores and 12 garages, Colesmead Road, Redhill, for B.C.—George G. Sanderson, borough engineer—Garraad and Sons, Sandown Road, Coulsdon, Surrey, £29,727 (accepted); C. W. Hitchcox, £37,562. Work commencing this month.

**Ripon and Pateley Bridge, Yorks.**—Nine bungalows, together with drains, paths, fences and external services at Shaw Mills for R.D.C.—J. C. Kenyon, architect—J. Bradley and Son (Builders), Ltd., 5 Berry's Avenue, Knaresborough, £12,327. Work commencing March 1.

**Rugby, War.**—Four flats adjoining Newbold Glebe shops for B.C.—Midland Builders (Rugby and Coventry), Ltd., Coventry, £6,299 (recommended, subject to Ministry approval).

**St. Albans, Herts.**—Forty-eight houses and garages at Jersey Farm estate for City Council—A. E. Simms, Ltd., 163 St. Albans Road, Sandridge, St. Albans, £89,345 (recommended).

**Southampton.**—Following for B.C.: Twenty-storey block of 114 flats at Redbridge roundabout (contract B.350)—Dor Properties (Bournemouth), Ltd., Cheam House, Exeter Road, Bournemouth, £227,720; 95 traditional houses (contract B.356) and 140 flats (contract B.357) at Thornhill—Carlton Contractors, Ltd., Carlton House, Ashley Road, Epsom, Surrey, £164,744 and £351,760; 66 Wimpey flats at Thornhill, section 4 (contract B.359)—G. Wimpey and Co., Ltd., Hammersmith Grove, London, W.6, £124,967 (recommended, subject to Ministry approval).

Twenty traditional houses at Surrey House site (contract B.353)—Bryan Development Builders, Ltd., 20 Jewry Street, Winchester, £35,983 (recommended in lieu of previous tender, subject to Ministry approval).

**Sunderland, Dur.**—Following for B.C. H. C. Bishop, borough architect: Two hundred and nine houses on Town End Farm estate—Direct Labour, £278,102.

Two hundred and fifteen houses at Town End Farm—L. W. Evans (Contractors), Ltd., 18 Norfolk Street, Sunderland, £304,600.

Twenty-six houses at Farrington and 27 at Percy Terrace—Direct Labour.

**Wandsworth, Ten.**—Ten houses, a flat and shop at phase 1 of Prescott Place scheme, Clapham, for B.C.—R. H. Lynn and Co., Ltd., 49 Acre Lane, London, S.W.2, £30,745 (recommended); Orchard and Peer (London), Ltd., £31,126; W. R. Oldham, Ltd., £31,198; M. Howard (Mitcham), Ltd., £31,416; Grosvenor Construction Co., Ltd., £33,192; J. Garrett and Son, Ltd., £35,672.

**West Kesteven, Lincs.**—Following for R.D.C.: Six bungalows at Barkston—W. Dobie and Sons, Ltd., Cortina, Chignall Road, Chelmsford, Essex, £8,412; four bungalows at Carlton Scroop and 18 dwellings at Ropsley—W. J. Roberts (Bottesford), Bottesford, Notts., £6,953 and £2,705, respectively. Work about to commence.

**Willesden, Middx.**—Following for B.C.: Blocks P and Q, South Kilburn—Mineralite rendering—E. E. Cheesman and Son, Ltd., 2 Stanstead Road, Forest Hill, London, S.E.23, £1,901; doors—F. Hills and Sons, Ltd., Sopers Road, Potters Bar, £3,285; plastering—W. A. Tilling, Ltd., 154 Field End Road, Eastcote, Pinner, £21,809 (recommended).

**Wisbech, I. of E.**—Fifty houses and 41 garages at Mount Pleasant estate (storebeck's land) for B.C.—Law Bros. (Builders), Ltd., City Road, Littleport, Ely, £81,132 (recommended).



**Woolwich.**—Erection of 152 dwellings on stage 5 of Bostall estate for B.C.—Direct Labour, £322,281 (recommended).

#### MATERIALS AND SUPPLIES

**Barking, Essex.**—Supply of wooden windows for Mayesbrook Meadow (contract 1) for B.C.—John Sadd and Sons, Ltd., 329 High Holborn, London, W.C.1, £921.

**Dagenham, Essex.**—Supply of (a) back boiler units and (b) ironmongery and sundries for Limbourne Avenue estate for B.C.—(a) City Iron Co., Ltd., 47 Upper Thames Street, London, E.C.4, £613; (b) Young and Marten, Ltd., 1 Romford Road, London, E.15, £771 (recommended).

**Plymouth.**—Supply of the following for City Council: Carcassing quality red deal—vths—The Plymouth and Oreston Timber Co., Ltd., Sutton Road, Plymouth, £1,591; carcassing quality red deal for Southway housing estate—Cole Bros. and Fox Elliott, Ltd., Millbay Docks, Plymouth, £2,241 (recommended, in lieu of previous tenders).

Metal windows for 44 houses at Southway—H. Hope and Sons, Ltd., Halford Works, Birmingham, 40, £1,309 (recommended).

#### PLANT AND MECHANICAL TRANSPORT

**Mansfield, Notts.**—Supply of one 25 cu. yd. refuse collection vehicle and one International TD9 crawler tractor, fitted with Drott 4-in-1 equipment and operator's cab for B.C.—Shelvoke and Drewry, Ltd., Letchworth, Herts., £3,387; and R. Cripps and Co., Ltd., Lombard House, Parliament Street, Nottingham, £6,495, less allowance of £700 for old vehicle, respectively (recommended).

**Southampton.**—Supply of a series 50 Taylor Jumbo model crane for B.C.—W. R. Selwood, Ltd., Chandler's Ford, Eastleigh, Hants., £5,225 (recommended).

#### PLAYING FIELDS, PARKS, ETC.

**Belfast.**—Erection of a store and improvements to playing field at Strandtown Primary School, North Road, for City Council—Rowley Construction Co., Main Street, Saintfield.

**Plymouth.**—Demolition of Burleigh House and out-buildings and site works to provide a games practice pitch and athletics training centre for Burleigh Secondary School for B.C.—Direct Labour, £4,108 (recommended).

**Willesden, Middx.**—Relevelling and resurfacing of Dollis Hill Avenue sports ground, for B.C.—Norman Hill 174 Twickenham Road, Isleworth, £7,983 (recommended).

#### RAILWAY ENGINEERING

**British Railways.**—Following contracts placed:

**Eastern Region:**

Provision of two-storey prefabricated timber office block at St. James Bridge, Doncaster—Vic. Hallam, Ltd., Langley Mill, Nottingham.

Reconstruction of underline bridge 4 between Old Leake (Goods) and Eastville—Charles R. Price, Barnsley Road, Doncaster.

Reconstruction of portion of superstructure of underline bridge 6 between Peakirk and St. James Deeping—W. and C. French, Ltd., Buckhurst Hill, Essex.

Provision of new roadways, drainage, loading docks, fencing gates and petrol storage and distribution facilities for the new District Engineer's and Signal Engineer's Workshops at Marshgate Yard, Doncaster—Charles R. Price, Barnsley Road, Doncaster.

Supply of six mobile air compressors—Air Pumps, Ltd., Bushey Road, Raynes Park, London, S.W.20.

Demolition of certain buildings, paving of areas inside and adjacent to stores buildings and provision of wagon turntable foundations and new gates at Doncaster Locomotive Works—Charles R. Price, Barnsley Road, Doncaster.

Supply and erection of an electrical installation at the new Carriage Servicing Depot, East Ham—Haines nad Sheppard, Ltd., Bush House, Aldwych, London, W.C.2.

Demolition of existing building and provision of foundations, drains, etc., for new prefabricated timber office block at St. James Bridge, Doncaster—Wellerman Bros., Ltd., Dun Street, Sheffield, 3.

Construction of tank bases, pump house, fuelling bases, canopies and drainage at Ipswich station—W. and C. French, Ltd., Ipswich Road, Dedham, near Colchester.

Reconstruction of Harringay Viaduct overline bridge 23 over main, suburban and goods lines between Harringay (West) and Hornsey—Thomas Fletcher and Co., Ltd., Forest Road, Mansfield, Notts.

#### RIVER AND FLOOD PREVENTION WORKS

**Mansfield, Notts.**—Re-grading part of the River Maun for B.C.—Direct Labour (recommended). Estimated cost £1,000.

**Middlesex.**—Sadlers Mill Stream diversion scheme, in the boroughs of Edmonton and Enfield for Lee Conservancy Catchment Board, comprising: (a) Construction of about 600 lin. yd. of 5ft. 6in. diameter culvert in tunnel, and about 275 lin. yd. of same in trench; (b) construction of about 325 lin.

yd. of reinforced concrete culvert of widths varying from 4ft. 6in. to 9ft. and height about 4ft., together with manholes and appurtenant works. J. D. and D. M. Watson, consulting engineers, 67 Tufton Street, Westminster, S.W.1—W. and C. French, Ltd., Buckhurst Hill, Essex, £142,274.

#### ROADS, BRIDGES AND SITE WORKS

**Abertillery, Mon.**—Road improvement at Cemetery Road, Six Bells, for U.D.C., involving support to the highway by fillings to batter against a toe retaining wall, with appurtenant road kerb and fencing work. Reginald H. Eke, engineer and surveyor—J. F. Dymond, 30 High Street, Newport, Mon.

**Bakewell, Derbys.**—Construction of road and sewers at the Eyam housing estate having approximately 1,100 super. yd. base coat tarmacadam and 460yd. run soil and surface water sewers for R.D.C. Arnold Lowcock, architect and surveyor—Tomlinson and White, Whitecoates Lane, Chesterfield, £3,143. Work to commence this month.

**Barking, Essex.**—Following for B.C.: Resealing joints in concrete carriageways, 1960/61—H. V. Smith and Co., Ltd., Walkden House, 3/10 Melton Street, London, N.W.1. £858; supply and laying asphalt at Linton Road/Church Road redevelopment—Val de Travers Asphalte, Ltd., 21 Old Bailey, London, E.C.4, £6,843; foundations, drainage and site works in the Church Road area (contract 3a)—W. C. French, Ltd., 50 Epping New Road, Buckhurst Hill, Essex, £34,346; supplying laying asphalt at Mayesbrook Meadow—Val de Travers Asphalte, Ltd., £1,380.

**Basildon, Essex.**—Construction of a (a) flyover bridge to take the Southend arterial, and (b) a road north of the flyover in connection with the north-west feeder road from the Town Centre for Development Corporation—The Hadsphalitic Construction Co., Ltd., Ibex House, Minories, London, E.C.3, (a) £103,795 and (b) £107,572.

**Beeston and Stapleford, Notts.**—Site preparation works at Ilkeston Road housing site (phase II) for U.D.C.—Butterworth and Partners, Ltd., Langley Mill, Nottingham, £19,550.

**Biggleswade, Beds.**—Construction of roads, sewers and water mains at London Road housing site 5 for U.D.C. T. Wilson, surveyor—John Sugrue and Son, 194 High Road, Kilburn, N.W.6, £19,036 (recommended); A. A. Briggshaw and Son, Ltd., £21,863; Sidney Green and Son, Ltd., £22,942; Winton Hayes, Ltd., £24,821; Blackwood, Murray and Sons, Ltd., £25,792; Wharton and Goodship, Ltd., £27,003. Work commencing January-February.



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**Boldon, Dur.**—Construction of road and drain for 50 houses at North Road, Boldon Colliery, for U.D.C.—Direct Labour, £2,260.

**Carmarthen.**—Making-up of lane leading from St. Davids Avenue to St. Non's Avenue, Carmarthen, and road improvements at the southern end of St. Non's Avenue for B.C.—Cambrian Construction Co., Ltd., Carmarthen.

**Chadderton, Lancs.**—Widening and diversion of Chadderton Hall Road for U.D.C., involving the widening to 60ft. of 760 lin. yd. of highway, the construction of 440 lin. yd. of new 60ft. highway and 350 lin. yd. of service road, together with surface water drainage, retaining walls, and ancillary works. F. W. Pexton, engineer and surveyor—W. Snape and Sons, Ltd., Eccles. Work commencing this month.

**Chatham, Kent.**—Resurfacing the High Street with asphalt for B.C.—Waywarden, Ltd., 215 Forest Road, London, E.17, £3,366 (recommended).

**Cheadle and Gatley, Ches.**—Making-up of (1) Motcombe Grove, and (2) Yew Tree Grove, Gatley, for U.D.C.—Nortons (Road Construction), Ltd., Macclesfield.

**Cranbrook, Kent.**—Roadworks at Cleavers, Sissinghurst, for R.D.C.—P. A. Barden and Sons, Ltd., Weaving House, Ashford Road, Maidstone, £2,429.

**Dagenham, Essex.**—Making-up of Egbert Road, Goring Road and Goring Road North for B.C.—Percy Bilton, Ltd., 113 Park Street, London, W.1, £10,442 (recommended).

**Daventry, Northants.**—Construction of roads, paths and sewers (part 1) for the shopping site for B.C.—J. E. Lucas, Ltd., Moulton, Northampton, £5,533 (recommended, subject to Ministry approval).

**Gateshead, Dur.**—Road improvements surrounding the Bensham Rectory Road housing site, the construction of internal roads and sewers and the provision of street lighting for B.C. G. F. Winters, borough engineer—Direct Labour, £12,654.

**Godalming, Surrey.**—Work comprised in the classified roads programme 1960/61 for B.C.—Bryan Watridge, Ltd., Seale Lane, Seale, Farnham, £5,734 (recommended).

**Heston and Isleworth, Middx.**—Reconstruction and resurfacing the carriageway of Vicarage Farm Road, north of Great West Road, and realigning the junction of Vicarage Farm Road and Cranford Lane, for B.C.—L. W. Brown and Sons (Contractors), Ltd., 150 Feltham Road, Ashford, Middx., £24,208 (recommended).

**High Wycombe, Bucks.**—Making-up of Herbert Road for B.C.—J. Smith and Sons (Walters Ash), Ltd., Walters Ash, near High Wycombe, £8,000 (recommended, subject to Ministry approval).

**Ilford, Essex.**—Following for B.C.: Reconstruction of High Road A118 (part)—Linney and McLaughlin, Ltd., 93 High Street, Barnet, Herts., £17,348 (accepted); Percy Bilton, Ltd., £22,956; Fitzpatrick and Son, £20,131; W. and C. French, Ltd., £21,390; J. Murphy and Sons, Ltd., £18,827; Ruddock and Meighan, Ltd., £19,080; Scott Hale (Contractors), Ltd., £19,266; Universal Welding and Construction Co., Ltd., £21,000; Val de Travers Asphalte, Ltd., £21,811.

Subway at the junction of Somerville Road/Eastern Avenue on the London-Great Yarmouth trunk road A12—Howard Farrow, Ltd., Bank Buildings, Russell Parade, Golders Green Road, London, N.W.11, £37,801 (accepted); W. and C. French, Ltd., £42,696; R. W. Hill and Co., Ltd., £38,569; J. Murphy and Sons, Ltd., £39,153; Ruddock and Meighan, Ltd., £43,418; Percy Bilton, Ltd., £46,212; Richard Costain, Ltd., £40,292.

**Kirkby-in-Ashfield, Notts.**—Construction of roads and sewers at Coxmoor Lodge housing estate for U.D.C. P. G. Shaw, engineer and surveyor—Butterworth and Partners, Ltd., Langley Mill, Nottingham, £20,934 (accepted); Better Roads, Ltd., £21,662; C. Millward and Co., Ltd., £22,564; Lane Bros., Ltd., £23,190; W. Prestwich and Sons, Ltd., £24,834; Fleet Bros., £24,069.

**Lamesley, Dur.**—Construction of three prestressed precast concrete bridges at the new Lamesley marshalling yards for British Railways—Mitchell Construction Co., Ltd., Peterborough. Estimated cost £60,000.

**Margate, Kent.**—Following for B.C.: Making-up part of Crawford Gardens and Brunswick Road—Direct Labour (recommended). Estimated cost £846.

Making-up part of Leicester Avenue—A. Wyles and Son, Ltd., The Highlands, Ramsgate Road, Margate, £4,654 (recommended).

Construction of road and sewers, etc., for stage I development of Millmead Road housing site—Direct Labour. Estimated cost £13,016. Work has just commenced.

**Mitcham, Surrey.**—Following for B.C.: Grooving, brushing and cleansing, priming and resealing joints in concrete carriageways to district roads—W. and J. Glossop, Ltd., 123 East Hill, London, S.W.18, 1s. 11d. per lin. yd. (recommended); Sparkes (Construction), Ltd., 2s. 6d. per lin. yd.

Sealing cracks to asphalt and bitumen macadam surfacing on concrete foundations to classified and district roads—W. and J. Glossop, Ltd., 1s. 9d. per lin. yd. (recommended); Sparkes (Construction), Ltd., 2s. 3d. per lin. yd.

**Newbury, Berks.**—Construction of roads and sewers on the remainder of Turnpike Road estate for B.C.—Sidney Green and Son

(Contractors), Ltd., Henley-on-Thames, Oxon (recommended extension of contract, subject to Ministry approval). Work commencing shortly.

**Oldbury, Glos.**—River works, including the construction of a reservoir and site preparation for the nuclear power station for the Central Electricity Generating Board—Sir Lindsay Parkinson and Co., Ltd., 6 Lambeth Road, London, S.E.1. Estimated cost £2,200,000.

**Oxfordshire.**—Extension of hardstandings to the existing taxi-way, drainage, lighting ducts, reconstruction of hangar floors, etc., at Benson R.A.F. Station for the Air Ministry—Tarmac Civil Engineering, Ltd., Ettingshall, Wolverhampton.

**Penrith, Cumb.**—Construction of roads and sewers on the Wetheriggs estate for U.D.C.—Eden Construction Co., Ltd., Carlisle, £18,100.

**Pontypridd, Glam.**—Advance preparation at Ynys Corrwg housing site, Hawthorn, for U.D.C. W. Cecil Evans, engineer—T. Gallagher and Son, Ltd., 4 Oaklands Drive, Bridgend.

**St. Albans, Herts.**—Supply of precast concrete beams for the construction of the bridge deck of Ashley Road bridge for City Council—Costain Concrete Co., Ltd., Duncan House, Dolphin Square, London, S.W.1, £1,252 (recommended).

**Southall, Middx.**—Section I of Tentelow Lane improvement scheme for B.C.—Norman Hill Plant Hire, 174 Twickenham Road, Isleworth, £34,253 (recommended, subject to C.C. and M.T. approval).


**Sutton and Cheam, Surrey.**—Widening of Hill Road for B.C.—John Sugrue and Sons, Ltd., 194 Kilburn High Road, London, N.W.6, £3,050 (recommended).

**Tettenhall, Staffs.**—Road improvement works, Lower Street, for U.D.C. The work comprises demolition of certain old buildings and forecourt walls, excavation, kerbing, paving of footpaths, and erection of new walls. J. W. Mason, engineer and surveyor—Perks and McRobie, Castlecroft Lane, Wightwick, £1,345. Work about to commence.


**Tottenham, Middx.**—West Green Road reconstruction from Philip Lane to Avenue Road for B.C. Walter Bryant, borough engineer and surveyor—Fitzpatrick and Son (Contractors), Ltd., 455 Old Ford Road, London, E.3, £17,984. Work commencing this month.

**Walthamstow, Essex.**—Following for B.C.: (a) Making-up of Keith Road, etc., and (b) supply and laying of 800 sq. yd. of red mastic asphalt—H. V. Smith and Co., Ltd., Walkden House, 3/10 Melton Street, London, N.W.1, (a) £9,968 and (b) 16s. 6d. per sq. yd. (recommended).


Road construction and drainage work at West Street and St. Stephens Road—Scott




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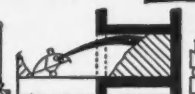
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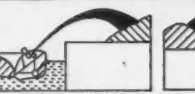
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Hale (Contractors), Ltd., 47 Globe Road, Hornchurch, £4,322 (recommended).

#### SEWERAGE, SEWAGE AND REFUSE DISPOSAL

**Clare, Suffolk.**—Kedington and Great Wrattling sewerage and sewage disposal scheme for R.D.C., comprising the furnishing and laying of about 5,800yd. of 9in. and 6in. stoneware and spun-iron pipe sewers, manholes, ventilators, about 2,500yd. of 6in. and 4in. spun-iron pumping mains, pumping stations, etc., and the construction of a sewage disposal works, consisting of sedimentation tanks, percolating filters, humus tank, feed, effluent, sludge, and top water pipes, etc., and other appurtenant works. D. Balfour and Sons, consulting engineers, 131 Victoria Street, Westminster, S.W.1—Biggs Wall and Co., Ltd., Ipswich, £97,005 (accepted); F. W. Shanks, Ltd., £97,488; T.H. Contractors, Ltd., £130,135; Thos. C. Stewart (Contractors), Ltd., £107,584.

**Hampstead.**—Construction of manholes to sewers for B.C.—O. C. Summers, Ltd., 109-113 York Way, London, N.7. Estimated cost £9,000.

**High Wycombe, Bucks.**—Laying of relief sewers in Hughenden Valley for B.C.—J. L. Eve Construction Co., Ltd., 17 Hillside, London, S.W.19, £67,542 (recommended, subject to Ministry approval).

**Lowestoft, Suffolk.**—Provision of an additional 15in. pipe from Victoria Road to Lake Lothing for B.C.—Direct Labour (recommended). Estimated cost £1,230.

**Morpeth, Northumb.**—Cresswell sewerage scheme for R.D.C. J. R. Miles, surveyor—Derek Crouch, Ltd., Widdrington, Northumberland.

**Stockton-on-Tees, Dur.**—Culverting of beck at Roseworth for B.C.—Direct Labour, £3,266.

**West Kesteven, Lincs.**—Construction of a small sewage disposal works in connection with a housing site at Ingoldsby for

**Worcester.**—Contract 1, branch sewer 4 for the Upper Stour Valley Main Sewerage Board, comprising the construction of approximately 3,400 lin. yd. of cast-iron and concrete pipe sewers, varying in diameter from 45in. to 9in., at varying depths, together with manholes, at Cradley Heath, Staffs., and Dudley, Worcs. O. C. Rowe, engineer—R. G. Horton (Engineers), Ltd., Brierley Hill, Staffs., £96,422. Work commencing Feb.-March.

#### STREET LIGHTING

**Alfreton, Derbys.**—Installation of 134 lighting units, including 140-W sodium Atlas lamps and Stanton concrete columns for U.D.C. F. P. Walters, surveyor—Abacus, Ltd., Sutton-in-Ashfield, Notts., £5,905 (accepted); Midland Lighting and Building, Ltd., £6,077; Cohen Bros. (Electrical), £5,996; Balfour Beatty and Co., Ltd., £6,435.

**Braintree and Bocking, Essex.**—Erection of 112 group B prestressed concrete columns; supply, erection and wiring up of 115 45/60-W sodium enclosed lanterns; laying of cable ducts across carriageways; dismantling of the existing lighting installation, and incidental works, for U.D.C. M. R. Richards, engineer—H. Smyth, 93 The Hoo, Harlow, Essex, £7,791 (subject to Ministry approval).

**Hampstead.**—Supply and delivery of lanterns, etc., and supply of columns and installation of equipment for street lighting improvements during 1960-61 for B.C.—General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2, £23,478 (recommended).

**Heston and Isleworth, Middx.**—Improving street lighting in Vicarage Farm Road for B.C.—General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2, £3,359 (recommended, subject to Ministry approval).

**Margate, Kent.**—Erection of street lighting equipment for stage 1 of the general street lighting scheme for B.C.—H. Smyth, 93 The Hoo, Harlow, Essex (recommended).

**Sandwich, Kent.**—Provision of 35ft. concrete standards with metal extensions at Ramsgate Road, and 25ft. concrete standards at Dover Road for B.C.—Engineering and Lighting Equipment Co., Ltd., Sphere Works, St. Albans, Herts.

**Tandragee, Armagh.**—Installation of the fluorescent street lighting scheme at Tandragee for U.D.C.—A.E.I. Lamp and Lighting Co., Ltd., 38-39 Upper Thames Street, London, E.C.4, £1,232. Work is expected to start in March.

#### GOVERNMENT CONTRACTS

**Admiralty.**—Particulars of contracts over £4,000 in value placed by Navy Works Department:

Devonshire: Administration block—Dudley Coles, Ltd., Plymouth.

**Air Ministry.**—Contracts to the value of £4,000 or over for the week ended Dec. 16: Artificers' work: Bircham Newton (Norfolk), etc.—R. G. Carter, Ltd., Drayton, Norwich, Norfolk.

Low pressure hot water heating and ventilation services: Handforth, Stockport, Ches.—Edwd. Deane and Beal, Ltd., Temple Chambers, Temple Avenue, London, E.C.2.

**Metropolitan Police.**—Recent contracts placed include:

Erection of flats: South Grove, Tottenham, London, N.15—J. and J. Dean (Contracts), Ltd., Ruckholt Works, 115 Ruckholt Close, Leyton, E.10, £30,398.

**Ministry of Finance, Northern Ireland.**—Contracts exceeding £250 in value placed during the period Nov. 28 to Dec. 7, inclusive:

Laying asphalt and tiling to floors: Auxiliary Fire and Rescue Service Station at Felden, Mill Road, Whitehouse—Neuchatel Asphalt (Contracting), Ltd., Northern Road, Belfast, 3.

Internal cleaning and painting: Matier's Building, 1 May Street, Belfast, 1—James Garvey and Co., Ltd., 351 Lisburn Road, Belfast, 1.

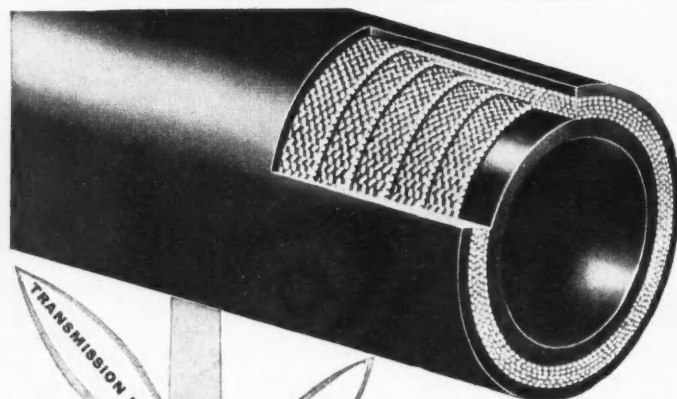
Construction of cattle and sheep pens, etc.: Ministry of Agriculture, Aughnacloy, Co. Tyrone—A. C. Simpson, Railway Street, Armagh.

Supply, etc., industrial protective clothing: Ministry of Finance Stores, 18-24 Tomb Street, Belfast, 1—(1) Gilpins of North Street, High Street, Belfast, 1, (2) Bedford Manufacturing Co., Ltd., 62-66 Bedford Street, Belfast 2.

Supply, etc., blue vicuna and blue worsted serge cloth: Ministry of Finance Stores, 18-24 Tomb Street, Belfast 1—(1) G. H. Hirst and Co., Ltd., Batley Yorks.; (2) R. Gaunt and Sons, Ltd., Broom Mills, Farsley, Pudsey.

Construction of one forester's cottage, garage and office: Ely Lodge Forestry Centre, Co. Fermanagh—McAleer and Teague, Dromore, Co. Tyrone.

External painting and internal cleaning: R.U.C. Station, Caledon, Co. Tyrone—J. McMullan, Mark Street, Dungannon.



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## PNEUMATIC NUMISMATICS

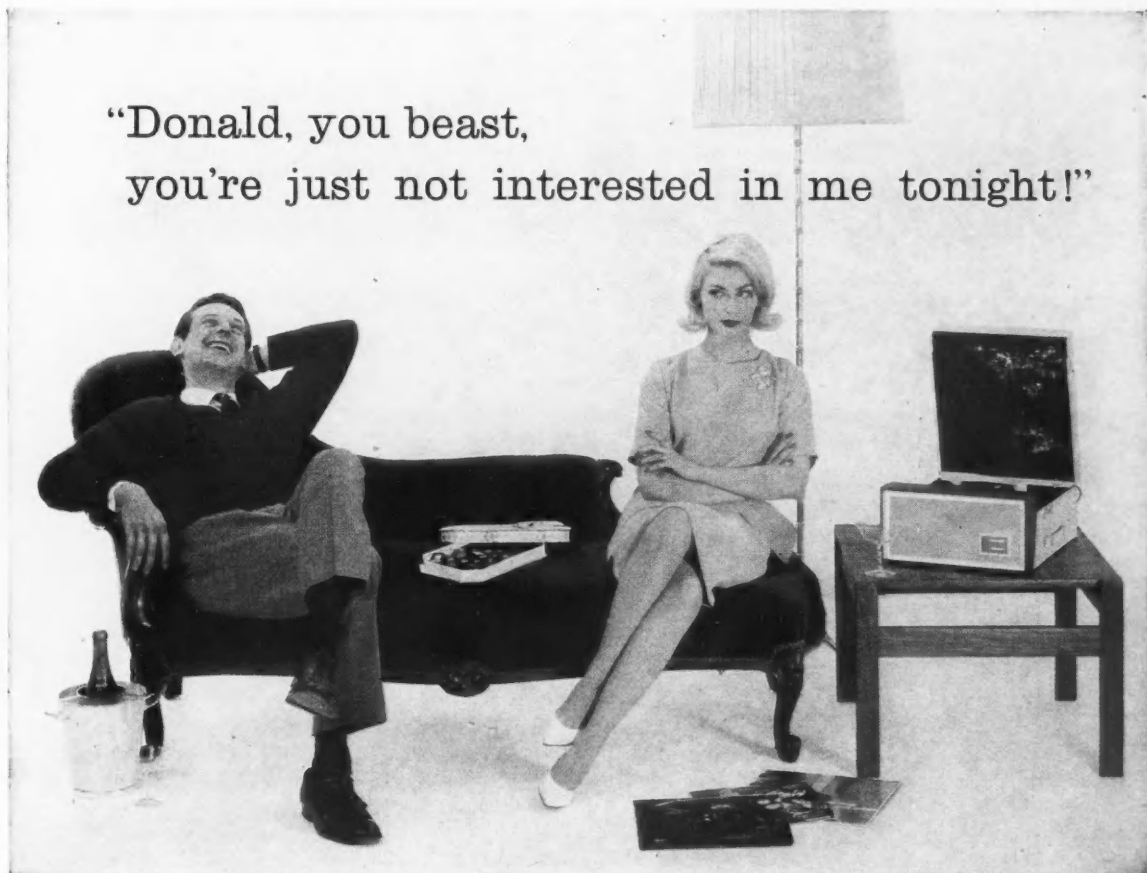
**Numismatics?** Yes, because someone must take the coins into account wherever air hose is used. If you want to keep down the operating costs of drilling, riveting, chipping or any other pneumatic tool duty, choose Goodyear hose. Strong and flexible, it gives lasting, trouble-free service with highest resistance to abrasion. In the Goodyear family tree there is a wide range of constructions, sizes and working pressures. Ask the Goodyear Technical Service for assistance in selecting the most economical hose for your jobs.

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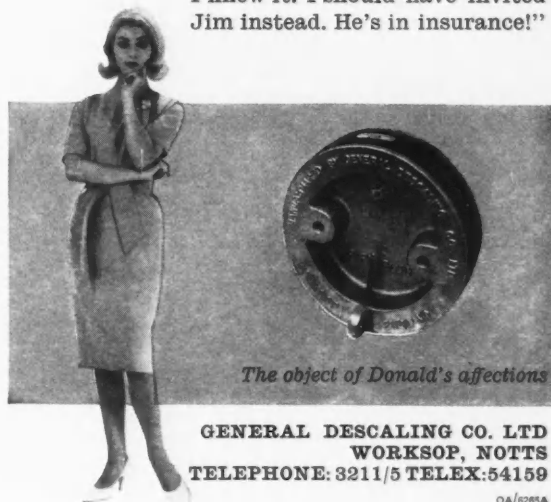
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" . . . . but now General Descaling have introduced these Lansas stoppers we've no more of *that* trouble! They're simple tools, really—an alloy body with inflatable rubber round it. Pop it in the drain, pump it up like a tyre. Easy. The lads on the site are *mad* about Lansas."

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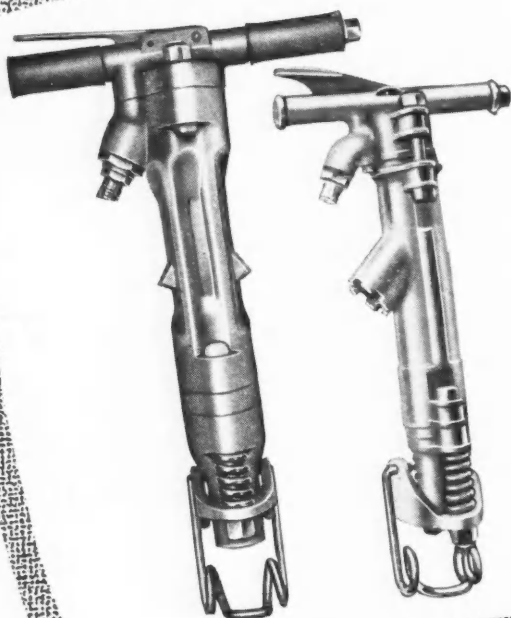
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(Continued from page 25)

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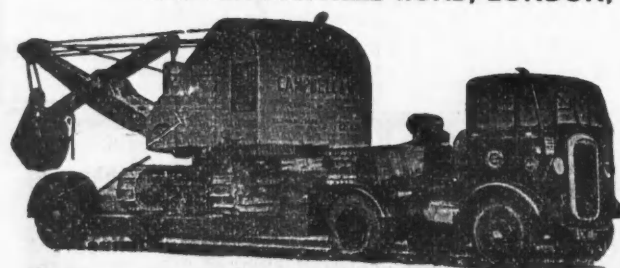
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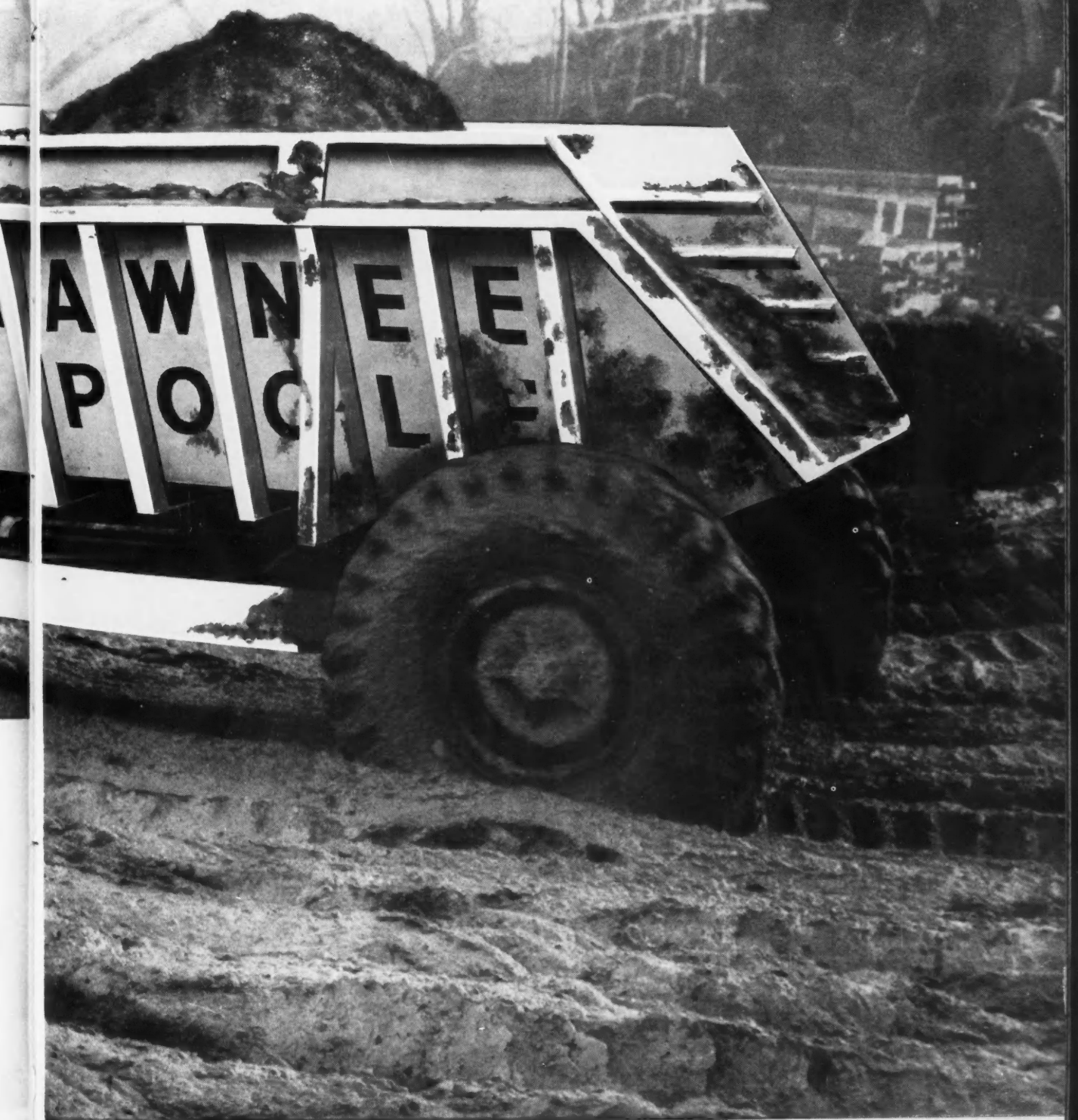
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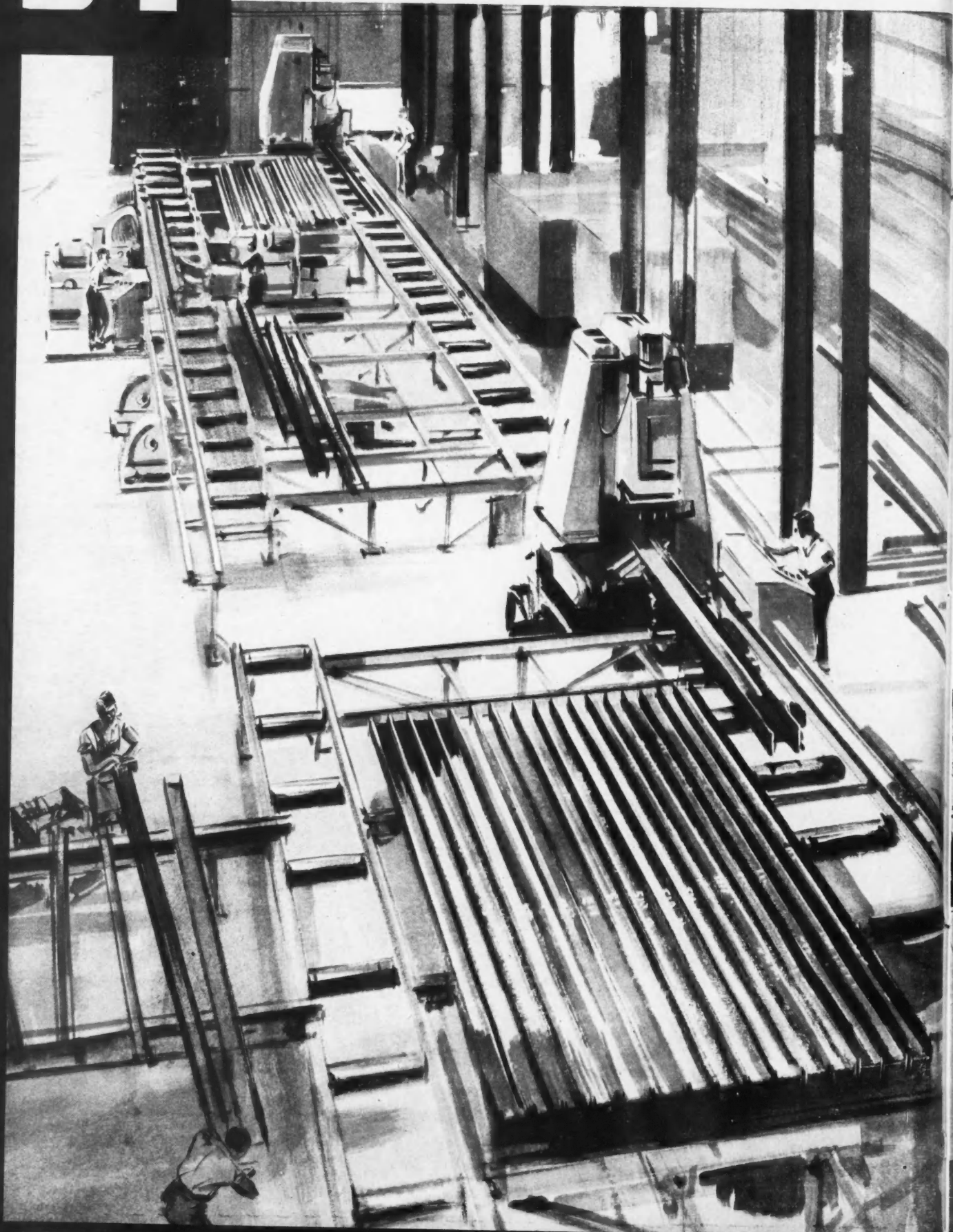
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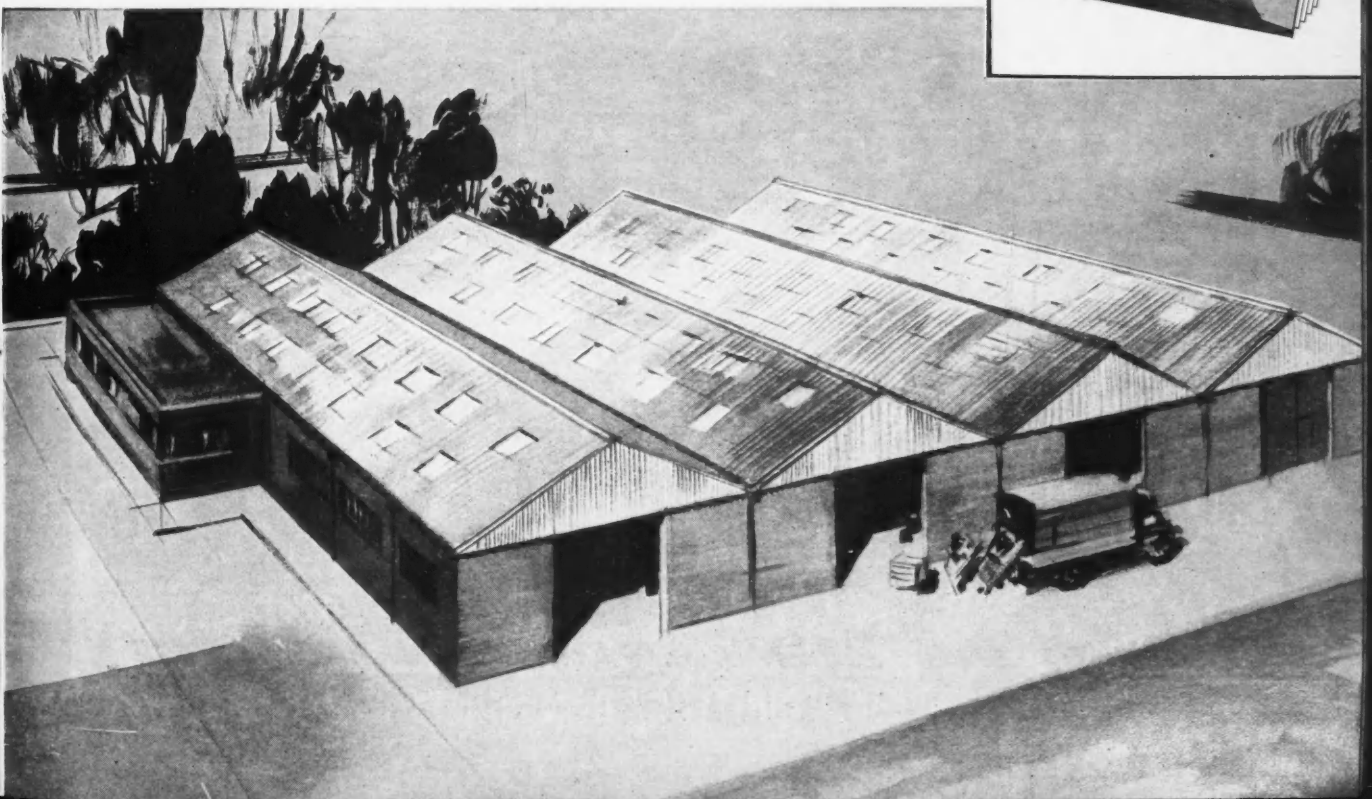
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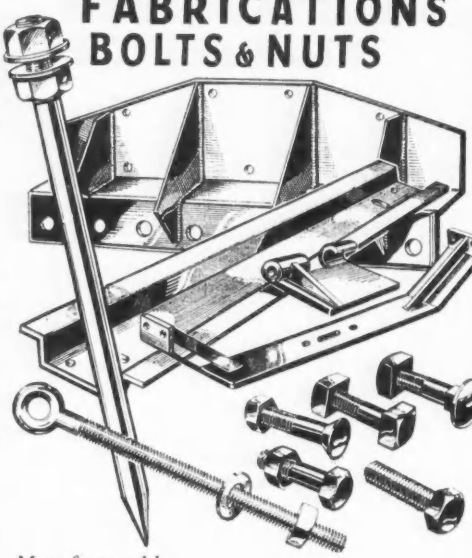
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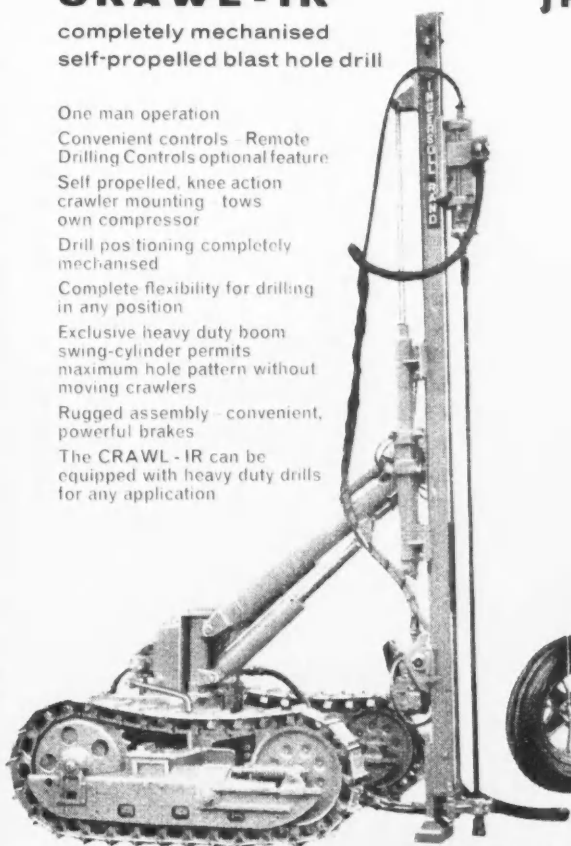
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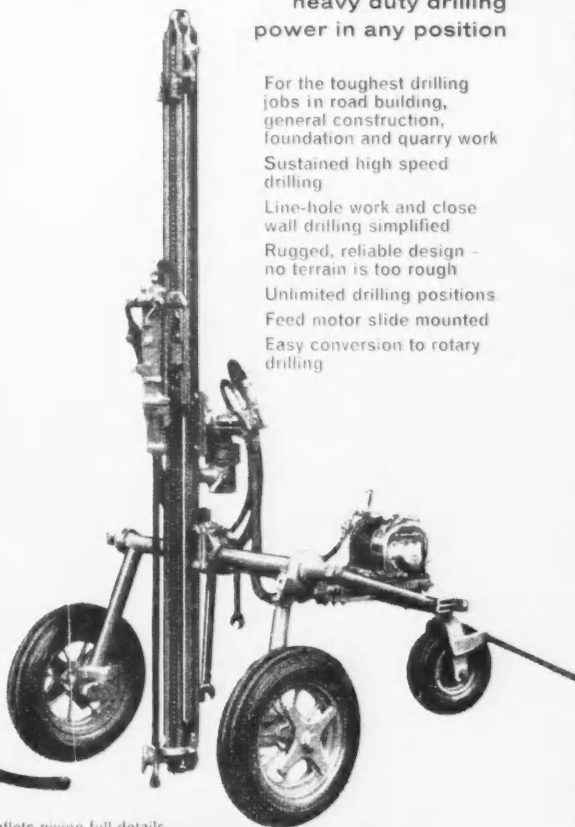
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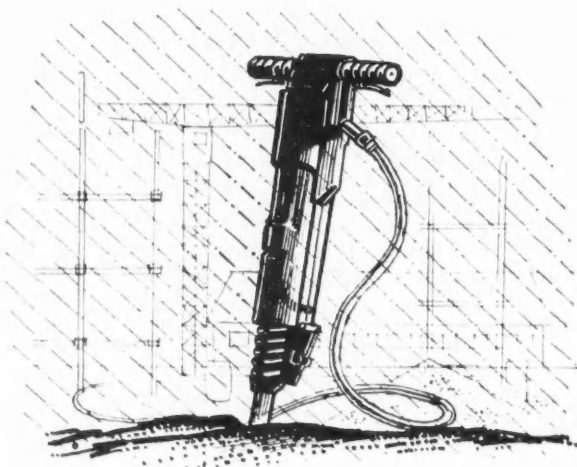
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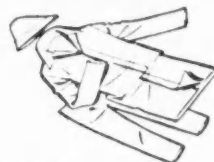
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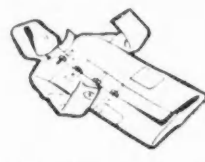
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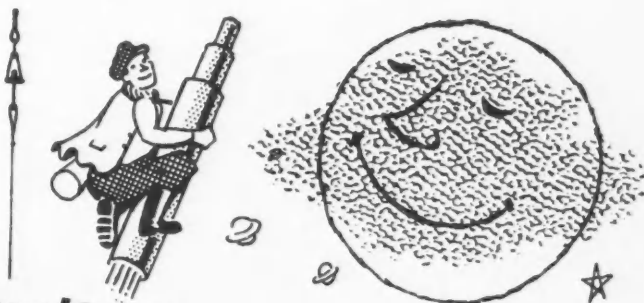
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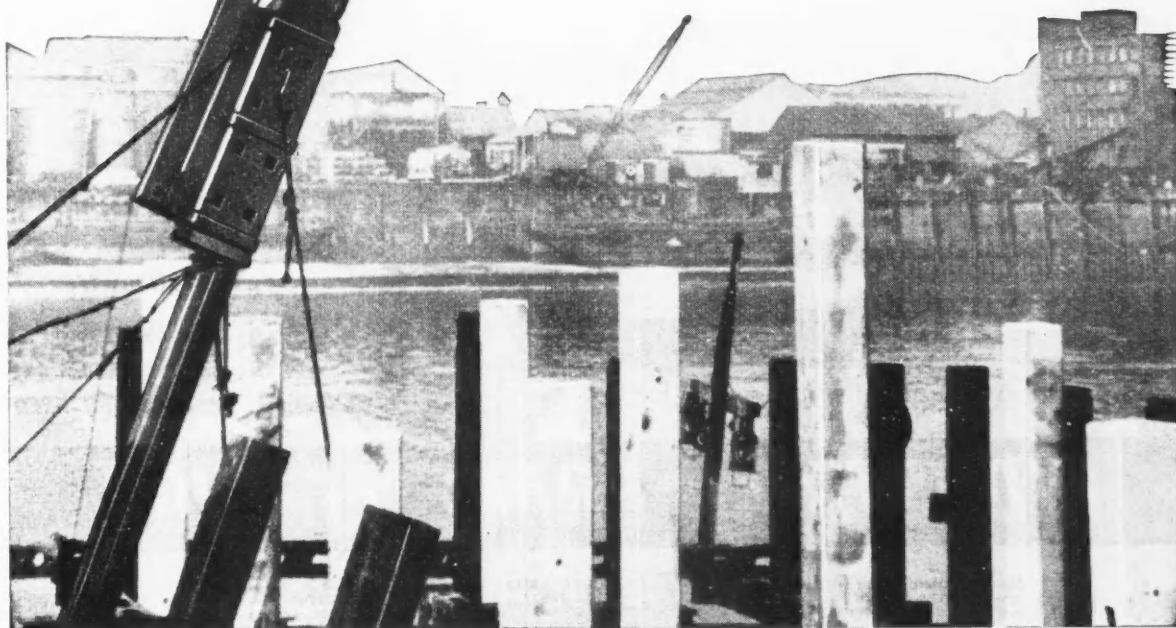


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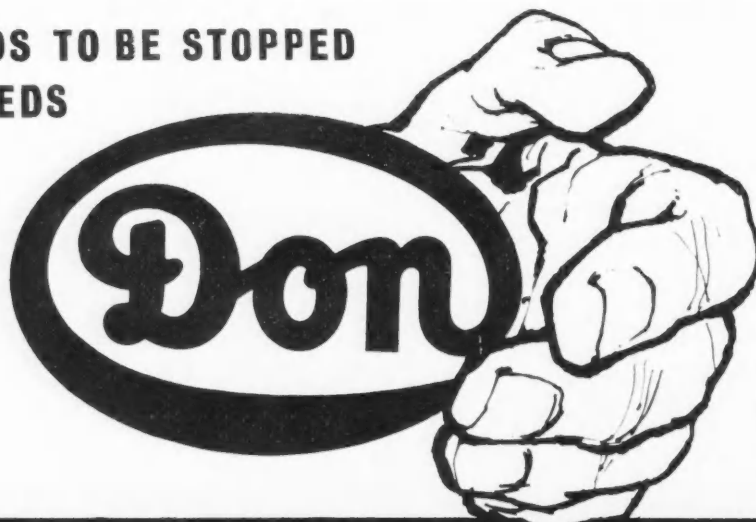
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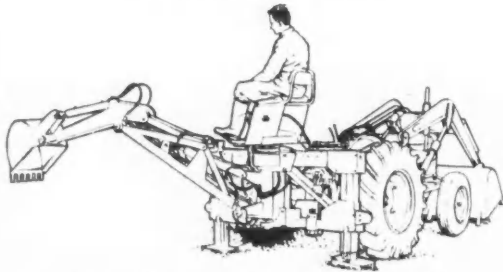
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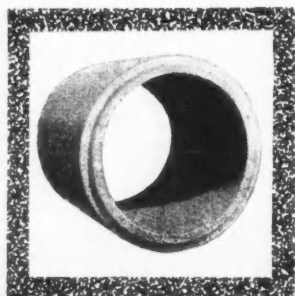
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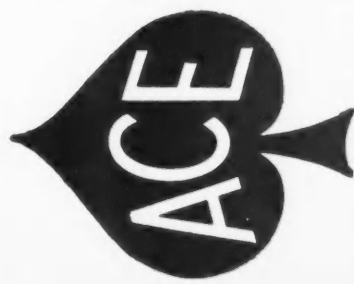
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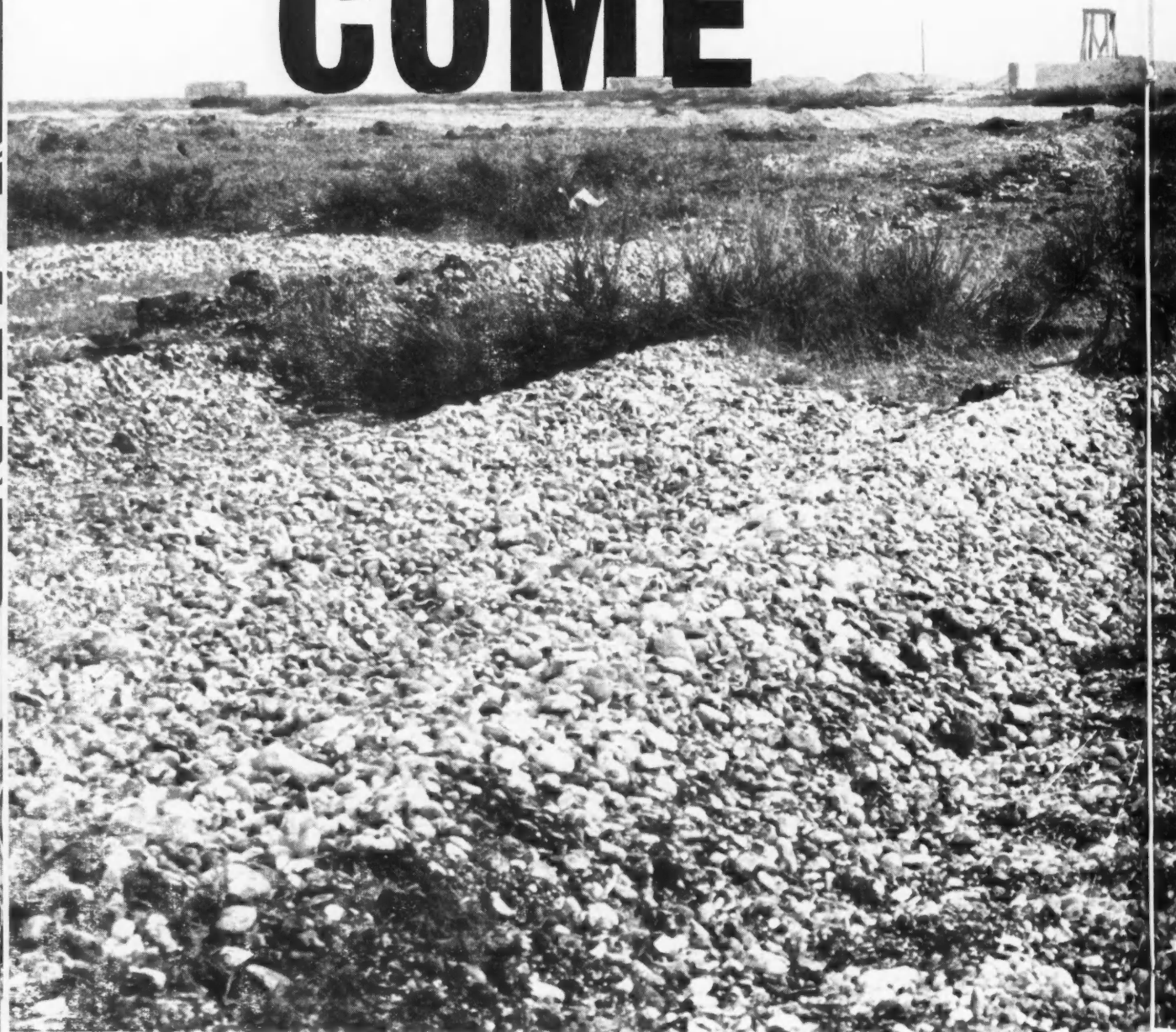


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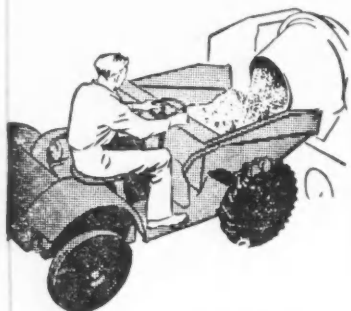
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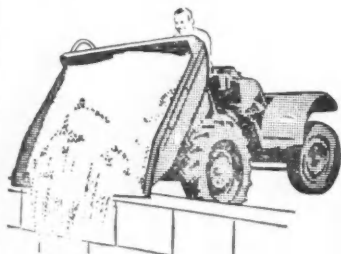
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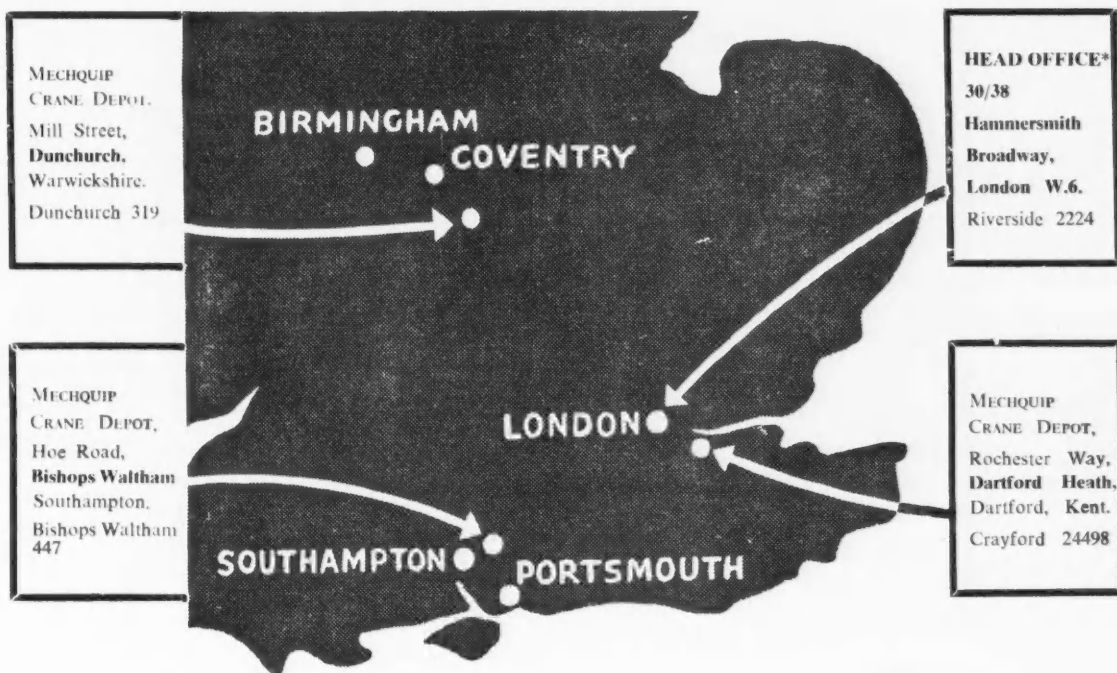
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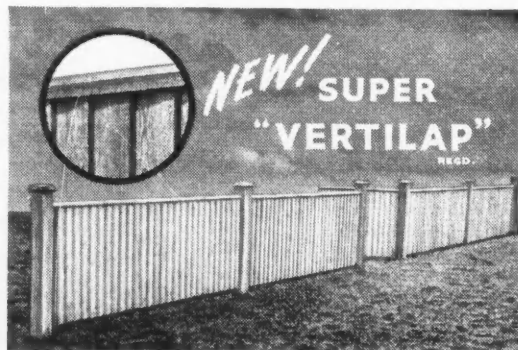
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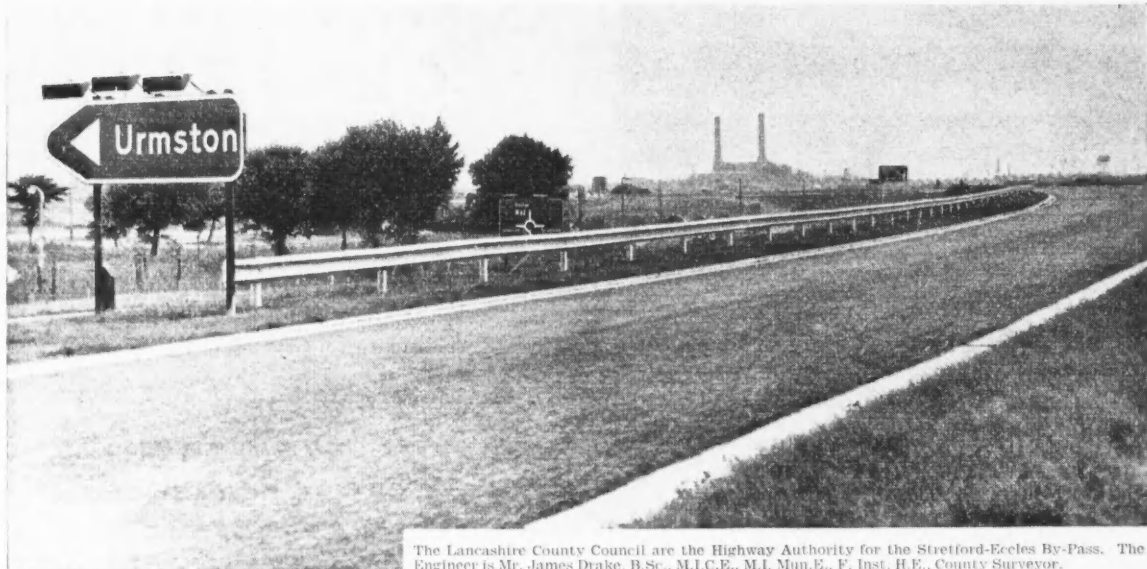
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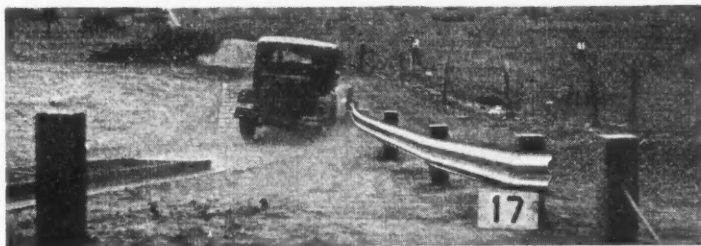
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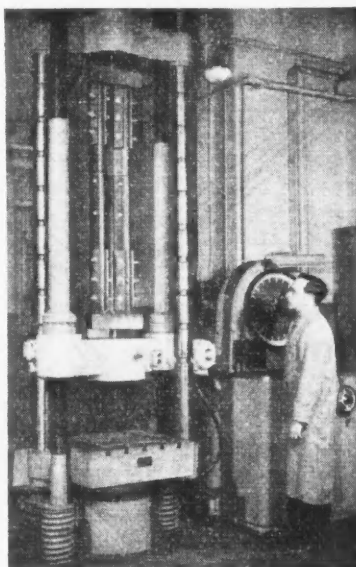
*Illustration below:*

One of the earliest guardrail tests in the United States proved the strength of controlled flexibility inherent in Armco Guardrail. The test was sponsored by the Missouri State Highway Department in 1934.



*Illustration on right:*

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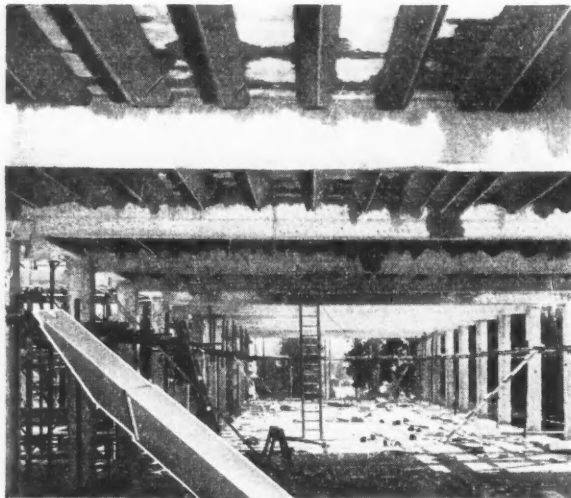
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\*Registered Trade Mark BT26870 Armco Galvanized FLEX-BEAM Guardrail Type 2 Registered Design 8929636.





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# CONTRACTORS' GUIDE TO AGGREGATES

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**DANGERFIELD, F. J., & CO., LTD.**, 261A Finchley Rd., London, N.W.3. (Tel.: HAMstead 8044/8.) (For all road aggregates, kerbs, setts. (See London.)  
**FERRERS AND AGGREGATES, LTD.**, Northampton Rd. Quarries, Rushden (2354/5). (See Northants.)  
**GRAVEL PRODUCTS (HUNTS), LTD.**, Little Paxton, St. Neots, Hunts. (Tel.: St. Neots 308.) Pits at Little Paxton, St. Neots, Hunts., and Blunham, Beds.  
**HARTIGAN, G. F. X., LTD.** (See Buckinghamshire.)  
**ST. IVES SAND AND GRAVEL CO., LTD.**, 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441/2, 3/4.) (See Huntingdonshire for details.)  
**WEBB, G., CAMBRIDGE**, 35 Magrath Ave., Cambridge. (Tel.: 59966, 53969, 50353 (night).) (See Cambs.)  
**WINFIELD, HENRY, LTD.**, Pix Farm Lane, Hemel Hempstead, Herts. (Tel.: Berkhamstead 1208/9.) Pits at: Leighton Buzzard, Bedford. Building sands.

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**AMEY'S AGGREGATES, LTD.**, Lower Wootton, Boars Hill, Oxford. (Tel.: Oxford 35421—10 lines.) Pits at Dry Sandford, near Abingdon, Sutton Courtenay, near Abingdon. (Tel.: Sutton Courtenay 275.) Theale, near Reading. (Tel.: Theale 358.)  
**BARDON HILL QUARRIES (ELLIS AND EVERARD)**, LTD., near Leicester. (Tel.: Coalville 1226/7/8, or London: VIGILANT 2530.) (For details, see Leeds.)  
**BULL BROS., S. and L., LTD.**, 126A High Street, Winchester. (Tel.: 2264.) (See Hampshire.)  
**COFF, HARRY A., LTD.**, Buckhurst Hill, Chesham, Bucks. (Tel.: Ascot 1026/7.) Sand, all grades of washed aggregates, hardcore, clinker, ashes and hoggins.  
**CURTIS, J., AND SONS, LTD.**, Botley Works, Oxford. (Tel.: Oxford 41081/2/3.) Sand and all grades of washed aggregates, pits at Radley, near Abingdon. (Tel.: Abingdon 441.)  
**DANGERFIELD, F. J., & CO., LTD.**, 261A Finchley Rd., London, N.W.3. (Tel.: HAMstead 8044/8.) (For all road aggregates, kerbs, setts. (See London.)  
**GRUNDON, S. (EWELEME), LTD.**, Eweleme, Oxon. (Tel.: Eweleme 20.) London Office (Tel.: Uxbridge 4156.) All grades washed aggregates, Path hoggins, broken stone, building sand.  
**HAINES, H. (WITNEY), LTD.**, Oxford Road, Witney. (Tel.: Witney 42.) All grades washed aggregates, hardcore, pitching and broken stone, Cotswold building and walling stone.  
**HALL AND CO., LTD.**, Cardiff Road, Reading. Pits at Theale. (Tel.: Theale 37.)  
**JANES AND CO., LTD.**, 2C Buckingham Avenue, Slough. Sand aggregates, hardcore, ashes, buldozing and bulk excavation. (Tel.: Slough 20361/2/3.)  
**LONDON BALLAST CO., LTD.**, (Tel.: Paddington 5064.) 55A Porchester Terrace, North Paddington, W.2.  
**POOLE (LECHLADE), LTD.**, Gravel Pit, Burford Road, Lechlade, Glos. (Tel.: Lechlade 219.)  
**RALPH OF BASINGSTOKE, LTD.**, 37 Kemphott Lane, Basingstoke, Hants. (Tel.: 85.) Concrete aggregates, building sand, path gravel, hoggins, etc.

## BRECKNOCKSHIRE

**NASH ROCKS STONE AND LIME CO., LTD.**, Prestegre, Radnor. (Tel.: Prestegre 352.) (See Herefordshire for details.)  
**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington. (Tel.: 961.) Salop.

## BUCKINGHAMSHIRE

**AMEY'S AGGREGATES, LTD.**, Lower Wootton, Boars Hill, Oxford. (Tel.: Oxford 35421—10 lines.) Pits at Dry Sandford, near Abingdon, Sutton Courtenay, near Abingdon. (Tel.: Sutton Courtenay 275.) Theale, near Reading. (Tel.: Theale 358.)  
**ASPHALTE CARPETS, LTD.**, 38 Buckingham Palace Road, London, S.W.1. Manufacturers of all grades of gravel bitumen macadam, gravel asphalt and cold asphalt at Gerrards Cross.  
**BARDON HILL QUARRIES (ELLIS AND EVERARD)**, LTD., near Leicester. (Tel.: Coalville 1226/7/8, or London: VIGILANT 2530.) (For details, see Leeds.)  
**BICESTER STONE CO., LTD.**, Stratton Audley, Bicester, Oxon. (Tel.: Stratton Audley 238.) Manufacturers and suppliers of all grades limestone, tarmacadam, gravel, pitching stone, hardcore, etc.  
**COFF, HARRY A., LTD.**, Buckhurst Hill, Chesham, Bucks. (Tel.: Ascot 1026/7.) (See Berkshire.)  
**DANGERFIELD, F. J., & CO., LTD.**, 261A Finchley Rd., London, N.W.3. (Tel.: HAMstead 8044/8.) (For all road aggregates, kerbs, setts. (See London.)  
**DRINKWATER, W. W. (WILLESDEN), LTD.**, Rush Green, Denham, Bucks. (Tel.: Denham 2241/2/3.)  
**GRUNDON, S. (EWELEME), LTD.**, Eweleme, Oxon. (Tel.: Eweleme 20.) London Office (Tel.: Uxbridge 4156.) All grades washed aggregates, Path hoggins, broken stone, building sand.  
**HAINES, H. (WITNEY), LTD.**, Oxford Road, Witney. (Tel.: Witney 42.) All grades washed aggregates, hardcore, pitching and broken stone, Cotswold building and walling stone.  
**HALL AND CO., LTD.**, Brentford, Middlesex. (Tel.: Isleworth 4455.) and Coronation Road, High Wycombe (Tel.: 4360/1), and at Gerrards Cross, Pits at Wraybury (Middx.) and Iwer (Bucks.)  
**HARTIGAN, G. F. X., LTD.**, High Street, Newport Pagnell. (Tel.: 126.) Graded and single-sized gravel aggregates to B.S.S. Pits at Newport Pagnell and Broughton, adjoining M. 40.  
**JANES AND CO., LTD.**, 2C Buckingham Avenue, Slough. Sand aggregates, hardcore, ashes, buldozing and bulk excavation. (Tel.: Slough 20361/2/3.)  
**LONDON BALLAST CO., LTD.**, (Tel.: Paddington 5064.) 55A Porchester Terrace North, Paddington, W.2.  
**MARLOW SAND AND GRAVEL CO., LTD.**, Westhorpe Pit, Little Marlow, Bucks. (Tel.: Marlow 379.)  
**STUART MACEY, LTD.**, Gordon Road, High Wycombe. (Tel.: High Wycombe 2591/2.)

## CAMBRIDGESHIRE

**BARDON HILL QUARRIES (ELLIS AND EVERARD)**, LTD., near Leicester. (Tel.: Coalville 1226/7/8, or London: VIGILANT 2530.) (For details, see Leeds.)

## CAMBRIDGESHIRE

**DANGERFIELD, F. J., & CO., LTD.**, 261A Finchley Rd., London, N.W.3. (Tel.: HAMstead 8044/8.) (For all road aggregates, kerbs, setts. (See London.)  
**DICKERSON, M. (CONTRACTORS), LTD.**, Gloucester Street, Cambridge. (Tel.: Cambridge 56973/4.) All grades washed sand and gravel, reject stone, hoggins, clinker, crushed granite, crushed and graded concrete, hardcore, brick rubble, ready-mixed concrete (all grades).  
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**NASH ROCKS STONE AND LIME CO., LTD.**, Prestegre, Radnor. (Tel.: Prestegre 352.) (See Herefordshire for details.)  
**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington. (Tel.: 961.) Salop.

## CHESHIRE

**BUCKTON QUARRY**, broken stone, all grades. (Tel.: Mossley 123.) Or write Main Road, Oldham.  
**CASTLETON SAND AND GRAVEL QUARRIES, LTD.**, Pennant End Quarry, Whaley Bridge. (Tel.: Whaley Bridge 139.) Washed sand and gravel.  
**CAWOOD, WHARTON AND CO., LTD.**, Pistyll Gwyn Quarry, Llanarmon, near Mold. (Tel.: Llanarmon-yn-Ial 27.) Crushed limestone and tarred macadam, all grades.  
**CHESHIRE AND NORTH WALES TARRED MACADAM CO., LTD.**, Llanarmon, near Mold. (Tel.: Llanarmon-yn-Ial 27.) Hard, broken limestone, dry and coated. B.S. Inquiries to registered office, Market Chambers, Tower Square, Tunstall, Stoke-on-Trent. (Tel.: Stoke-on-Trent 88094.)  
**CROXDEN GRAVEL, LTD.**, Cheddle, Stoke-on-Trent. (Tel.: Tean 393.) Manchester Office: Blackfriars 3766/7. Plant capacity, 2,000 tons per day.  
**DUNNING AND SON, LTD.** (See Shropshire.)  
**HILTON GRAVEL, LTD.**, Rice Street, Liverpool Road, Manchester, 3. (Tel.: Deansgate 5455 and 5456.) Quarries at Cheddle, Staffs. (Tel.: Tean 241.) And at Longton, Stoke-on-Trent. (Tel.: Longton 32196.)  
**HULLAND GRAVEL CO., LTD.**, Cheddle, Stoke-on-Trent. (Tel.: Cheddle 2323/4, 2119 and 2195.) Manchester Office: 464 Wilbraham Road, Chorlton, Manchester, 21. (Tel.: Chorlton 2274/5.)  
**PENMAENMAWR AND WELSH GRAITE CO., LTD.**, Picton Road, Liverpool, 5. (Tel.: Sefton Park 7261.) All sizes and gradings of crushed granite aggregate from our Collingwood Dock (Liverpool) Depot. Any quantity per day; immediate delivery ex stock.  
**TERN HILL SAND AND GRAVEL CO., LTD.**, Alington Quarries, near Market Drayton, Staffs. (Tel.: Hales 261/2/3.) (See Staffordshire for details.)  
**TRENTHAM GRAVEL CO., LTD.**, Lordsley Quarries, Willoughbridge, near Market Drayton, Salop. (Tel.: Pipe Gate 304/5.) All sizes, crushed or natural washed gravel. Twice washed sharp concrete sand. Plant capacity: 2,000 tons per day.  
**WARDLOW LIMESTONE, LTD.**, Caudon Low, N. Staffs. (Tel.: Oakmoor 366.) (For details, see Staffs.)  
**WILLIAMS, C. F., LTD.**, Bishop Street Sand Quarry, Turncroft Lane, Stockport. (Tel.: Stockport 7096.) Building sand and concrete sand. Bulk sand and gravel hilling a speciality.

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**ESK MANUFACTURING CO., LTD.**, Dalston Road, Carlisle, Cumberland. (Tel.: Carlisle 2-4941.) All grades washed, crushed gravel and concreting sand to B.S. Specification. Precast concrete products and partition blocks. Sand lime coloured facing and common bricks. Ex works or delivered.

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**BALLIDON QUARRIES, LTD.**, Ballidon, near Ashbourne, Derbyshire. (Tel.: Parwich 201 and 202.) Clean and graded dry limestone to B.S.S., all sizes; coated limestone to B.S. 802 and 1621 and wet-mix; large output; reliable deliveries.  
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**HOVERINGHAM GRAVEL CO., LTD.**, Hoveringham, Nottingham. (Tel.: Loughborough 3171—15 lines.) (For details, see Nottinghamshire.)  
**HULLAND GRAVEL CO., LTD.**, Cheddle, Stoke-on-Trent. (Tel.: Cheddle 2323/4, 2119 and 2195.) Manchester Office: 464 Wilbraham Road, Chorlton, Manchester, 21. (Tel.: Chorlton 2274/5.)  
**KEVIN LIME CO., LTD.**, Oakmoor, Staffs. (Tel.: Oakmoor 385-386.) Clean graded dry limestone, all to B.S.S. Specifications. Output 1,000 tons per day.  
**SALISBURY AND WOOD, LTD.**, Matlock. (Tel.: 272/273.) Limestone and granite, dry or coated gravel and shales, slabs, blocks, posts, reconstructed and natural stone, lime and ground limestone, lightweight aggregates, ashes, red shale.  
**WARDLOW LIMESTONE, LTD.**, Caudon Low, N. Staffs. (Tel.: Oakmoor 366.) (For details, see Staffs.)

## DORSET

**BULL BROS., S. and L., LTD.**, 126A High Street, Winchester. (Tel.: 2264.) (See Hampshire.)  
**DANGERFIELD, F. J., & CO., LTD.**, 261A Finchley Rd., London, N.W.3. (Tel.: HAMstead 8044/8.) (For all road aggregates, kerbs, setts. (See London.)  
**DORSET LIMESTONES, LTD.**, Bumpers Lane, Easton, Portland, Dorset. (Tel.: Portland 2207/8.) Tarred and bituminous macadam, foundation materials, limestone for all purposes and to all gradings. Portland stone aggregates and Portland caststone aggregates for reconstructed stone. By road and sea.  
**GILSON, S. C., AND SONS, LTD.**, Holcombe, near Bournemouth. (Tel.: Stratton-on-the-Fosse 243.)  
**HALL AND CO., LTD.**, 8 Commercial Road, Parkstone. (Tel.: 5379.)  
**MOREYS (VERWOOD), LTD.**, Verwood, Wimborne, Dorset. (Tel.: Verwood 234.) Concrete aggregates, building sand, hoggins, path gravel.

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**ALRESFORD SAND AND BALLAST CO., LTD.**, Alresford Creek, near Colchester, Essex. (Tel.: Wivenhoe 341/494.) Pits at Alresford Creek, Brightingsea, Stoke-by-Nayland, Bures and Holland. All grades of washed shingle, concreting sand and building sand. Road and water transport.  
**BAKER, F. AND E., LTD.**, 73 High Road, Rayleigh, Essex. (Tel.: Rayleigh 1031/2.) Pits at Great Totham, Heybridge and West Tilbury. All grades of washed material supplied and delivered; also hardcore ashes and bricks.  
**BARDON HILL QUARRIES (ELLIS AND EVERARD)**, LTD., near Leicester. (Tel.: Coalville 1226/7/8, or London: VIGILANT 2530.) (For details, see Leeds.)  
**BUCKRICKS COMPANY, LTD.**, Sand and Ballast Pits, Martles, Ardleigh, Colchester. (Tel.: Ardleigh 310.) All grades of washed aggregates, sand, building sand, asphalt, grit. Sterilised dry sand accurately graded to buyers' requirements.  
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**FERRIS PITS, LTD.**, The Limes Garage, Fencepiece Road, Barking, Essex. (Tel.: Hainault 5271/2-3001/2.) Pits at Orsett, near Stanford-le-Hope, and Upminster. All grades of washed aggregates, plastering and building sands supplied and delivered; also hardcore and ashes.  
**HALL AND CO., LTD.**, Manor Road, Romford. (Tel.: Romford 42321.) Pits at Upminster, Boreham and Lifford, near Grays. Gravel aggregates, concreting, plastering and building sand.  
**HUNNABLE, F. A., AND SON, LTD.**, Rayne Road, Braintree, Essex. (Tel.: Braintree 151 and 1351.) Graded washed stone, i.e. to rejects: washed concrete sand and washed soft sand and sand. Classified sand for asphalt. Ready mixed concrete to all grades. Pits at Braintree, Bocking, Beasley End, Hedingham and Althamstone.  
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**PETERS AND BARMAN, LTD.**, 309 South Street, Romford. (Tel.: Romford 4414—7 lines.) Washed and crushed gravel, all sizes; sand Pits at Asheldham, Chignall St. James, Dagenham, Great Waltham, North Ockendon, Roxwell, West Thurrock.  
**PINCH, A. A., AND A., LTD.**, Upper Rainham Road, Elm Park, Hornchurch, Essex. (Tel.: Hornchurch 48912/3/4.) Haulage, all aggregates and excavation.  
**REAL, P. T., LTD.**, Fairlop Airfield, Forest Road, Ilford. (Tel.: Barking 6111/2/3.) Graded sands, ballast and shingles supplied and delivered; also ready-mixed concrete.  
**ST. IVES SAND AND GRAVEL CO., LTD.**, 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441/2/3/4 and Halstead 2323.) Pits at St. Ives and Gosfield, near Halstead.

## GLOUCESTERSHIRE

**AMEY'S AGGREGATES, LTD.**, Lower Wootton, Boars Hill, Oxford. (Tel.: Oxford 35421—10 lines.) Pits at Dry Sandford, near Abingdon, Sutton Courtenay, near Abingdon. (Tel.: Sutton Courtenay 275.) Theale, near Reading. (Tel.: Theale 358.)  
**BENGRI AND SONS, LTD.**, Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301/4.) (See details under Herefordshire.)  
**COKE, T. F. (CHELTENHAM), LTD.**, 267 Gloucester Road, Cheltenham. (Tel.: Cheltenham 4717/4747.) Sand, graded gravel aggregates, hardcore, limestone, chippings, tarred and bituminous limestone, concrete blocks, fence posts, etc.  
**CROMHALL QUARRIES, LTD.**, Cromhall, Wotton-under-Edge, Glos. (Tel.: Falfield 3467.) Concrete aggregates, pre-graded in large quantities. Tarmacadam, tarwoven, bituminous macadam and cold asphalt to B.S.S. for hand or machine laying.  
**FLOYD AGAR AND CO., LTD.**, Sherston, Malmesbury, Wilts. (Tel.: Sherston 237.) Cotswold building stone, hardcore, etc. (Details under Wiltshire.)  
**GRIFFITHS, A., AND SONS, LTD.**, Churchdown, Gloucester. (Tel.: Churchdown 3135 and 2216.) Pit, quarry and dredge owners. All grades and types aggregate materials.  
**HALL AND CO., LTD.**, Longmoor House, Ashton Vale Road, Bristol, 3. (Tel.: 63001.) Gravel aggregates, concreting, plastering and building sand.  
**POOLE (LECHLADE), LTD.**, Gravel Pit, Burford Road, Lechlade, Glos. (Tel.: Lechlade 219.)  
**SHAKEMANTLE QUARRY CO., LTD.**, Cinderford, Cinderford, Glos. (Tel.: Cinderford 3197.) "Oura" Facing, Engineering and Common Bricks in terra-cotta, red and golden brown. Concrete aggregates, roadstones, and Dolomitic media.  
**TAYMAC, LTD.**, Wootton Bassett, near Swindon, Wilts. (Tel.: Wootton Bassett 391—5 lines.) Cotswold stone, hardcore, washed and graded aggregates, building sand.

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# CONTRACTORS' GUIDE TO AGGREGATES

## GLOUCESTERSHIRE

**WHITECLIFF QUARRIES AND BRICKWORKS, LTD.**, Coleford, Glos. (Tel.: Coleford 3158 9.) Tarrad and bituminous limestone, concrete, asphalt, concrete aggregates, dolomitic media, engineering, facing and common bricks for all purposes. Delivery road or rail.

## HAMPSHIRE

**AMEY'S AGGREGATES, LTD.**, Lower Wootton, Boars Hill, Oxford. (Tel.: Oxford 35421—10 lines.) Pits at Dry Sandford, near Abingdon, Sutton Courtenay, near Abingdon (Tel.: Sutton Courtenay 275.) Theale, near Reading. (Tel.: Theale 358.) Dorchester, Oxon. (Tel.: Warborough 473.) Billing, Northampton (Tel.: Cogenhoe 564.) For washed and graded aggregates to B.S.S.

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**BULL BROS. S. AND L., LTD.**, 126A High Street, Winchester. (Tel.: 2264.) Concreting aggregates (reconstituted, pit-mixed, weighbatched to meet any specification); also ballast, hoggins, path gravel and sand from own pits at Fawley, Lockerley, Ringwood, Romsey, Swan and Totton.

**DANGERFIELD, F. J. AND CO., LTD.**, 261A Finchley Road, London, N.W.3. (Tel.: HAMstead 8044 8.) For all road aggregates, kerbs, setts. (See London.)

**GILSON, S. C. AND SONS, LTD.**, Holcombe, near Bath. (Tel.: Stroud-on-the-Forest 243.)

**HALL AND CO., LTD.**, Baltic Wharf, Marine Parade, Southampton (Tel.: Southampton 21234.) and at Portsmouth. Pits at Ringwood, Highbridge and Fawley. Gravel aggregate, concreting, plastering and building sand.

**HASKINS, G. AND SONS, Queen Street, Emsworth.** For washed sand and graded aggregates, path and road gravels, hoggins, clinker, ashes. (Tel.: Emsworth 2271.)

**MORREYS (VERWOOD), LTD.**, Verwood, Wimborne, Dorset. (Tel.: Verwood 234.) Concrete aggregates, building sand, hoggins, path gravel.

**NEW MILTON SAND AND BALLAST CO., Lyngington Road, New Milton, Hants. (Tel.: 37 and 566.)** Guaranteed uncrushed, washed, screened and graded concrete aggregates. All sizes. Washed sharp and fine sands.

**PRIVETT, W. G. AND SONS, LTD.**, Drayton Lane, Portsmouth. (Tel.: Cosham 7059.) Concrete aggregates, building sand, hoggins, ashes, washed and graded filter media, etc.

**RALPH OF BASINGSTOKE, LTD.**, 37 Kempshott Lane, Basingstoke, Hants. (Tel.: 85.) Concrete aggregates, building sand, path gravel, hoggins, etc.

**TWICKENHAM GRAVEL CO., LTD.**, Ship Lane, Farnborough (Tel.: 1126); Sandhurst Road, Yateley (Tel.: 2230.)

**WESSEX SAND AND GRAVEL CO.**, 126 Hillside Avenue, Southampton. (Tel.: 55616.) Pits at Romsey and Fair Oak. Concrete aggregates, hoggins, building sand, etc.

## HEREFORDSHIRE

**BENGRI AND SONS, LTD.**, Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301/4.) Suppliers of all grades of crushed concrete aggregates, road metal, pitching stone, hardcore and coated macadam.

**CLEE HILL TRANSPORT AND ROLLING CO., LTD.**, Ludlow, Salop. (Cleehillstone 284.) (See Shrops.)

**NASH ROCKS, STYNE AND LIME CO., LTD.**, Presteigne, Radnor. (Tel.: Presteigne 352.) All grades of tarrad and bituminous macadam, roadstone, chippings and concrete aggregates, etc.

**OLD RADNOR TRADING CO., LTD.**, Kingston (Tel.: 421.) Granite and limestone aggregates coated macadam, concrete products.

**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington. (Tel.: 961.) Salop.

**WHITECLIFF QUARRIES AND BRICKWORKS, LTD.**, Coleford, Glos. (Tel.: 3158 9.) (See Gloucestershire.)

## HERTFORDSHIRE

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**DANGERFIELD, F. J. AND CO., LTD.**, 261A Finchley Road, London, N.W.3. (Tel.: HAMstead 8044 8.) For all road aggregates, kerbs, setts. (See London.)

**EASTWOODS SALES, LTD.**, Eastwood House, City Road, E.C.1. (Tel.: Clerkenwell 2040.) Broxbourne pit. (Tel.: Hoddeston 2456.) Producers and distributors of all grades of washed aggregates.

**GABRIEL, C. LTD.**, Palmers Lane, Enfield, Middx. (Tel.: HOWard 4351 2/3.) Washed aggregates and building sand. Pits at Enfield and Hertford.

**HALL AND CO., LTD.**, Railway Yard, Orchard Road, Stevenage (Tel.: 775.) and at Hatfield. Gravel aggregates, concreting, plastering and building sand.

**HARTIGAN, G. F. X., LTD.** (See Buckinghamshire.)

**ST. IVES SAND AND GRAVEL CO., LTD.**, 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441 2/3/4.) (See Huntingdonshire for details.)

**SHAKEMANTLE QUARRY CO., LTD.**, Cinderford, Glos. (Tel.: Cinderford 3197.) "Doura" Facing, Engineering and Common Bricks in terra-cotta, red and golden brown. Concrete aggregates, roadstones and dolomitic media.

**TWICKENHAM GRAVEL CO., LTD.**, Eleanor Cross Road, Waltham Cross. (Tel.: 23388.)

**WEBB, G., CAMBRIDGE**, 35 Magrath Av., Cambridge. (Tel.: 59966, 53969, 50353 (night).) (See Cambs.)

**WINFIELD HENRY, LTD.**, Pix Farm Lane, Hemel Hempstead, Herts. (Tel.: Berkhamsted 1208 9.) Pits at Hemel Hempstead, Watford, West Herts, Rickmansworth. Concrete aggregates, hoggins, building sand.

## HUNTINGDONSHIRE

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**FERRERS AGGREGATES, LTD.**, Northampton Road Quarries, Rushden (2354 5.) (See Northants.)

**GRAVEL PRODUCTS (HUNTS), LTD.**, Little Paxton, St. Neots, Hunts. (Tel.: St. Neots 308.) Pits at Little Paxton, St. Neots, Hunts.; and Blunham, Beds.

**NENE BARGE AND LIGHTER CO., LTD.**, Market Chambers, Peterborough. (Tel.: 5534 5.) and Ship End Quarries, Wansford, near Peterborough. (Tel.: Wansford 384 5.) Roadstone, hardcore, broken stone, ballast, ashes, silica clay and sand.

## HUNTINGDONSHIRE

**ST. IVES SAND AND GRAVEL CO., LTD.**, 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441 2/3/4.) Producers of all grades of washed sand and gravel. Ready mixed concrete. Precast concrete of every description.

**WEBB, G., CAMBRIDGE**, 35 Magrath Av., Cambridge. (Tel.: 59966, 53969, 50353 (night).) (See Cambs.)

## KENT

**BRASTED SAND PITS**, Brasted, Kent. (Tel.: 586.) London Office: 10A Ellery Street, S.E.15. (Tel.: New Cross 3337.) Soft and plastering sands, lime and sand-mix dry, hardcore, S.H. bricks, asbestos, etc.

**BROWN BROS. (SITTINGBOURNE), LTD.**, Chalkwell Road, Sittingbourne, Kent. (Tel.: Sittingbourne 330.) Sand, ballast, shingle, hoggins, hardcore, clinker, chalk, etc.

**CLARE, J., LTD.**, Dartford, Kent. (Tel.: Dartford 25431.) Pits in North Kent, Medway area and Sevenoaks district. All washed and crushed gravel aggregates, concreting and building sand.

**DIAMOND TREAD CO. (1938), LTD.**, Ditton Court Quarry, Arkfield, near Maidstone. (Tel.: West Malling 3444.) Quarry owners, tarmac, macadam, bituminous macadam and dry road stone manufacturers and suppliers. Head Office: 21-22 Old Bailey, London, E.C.4. (Tel.: City 7001—10 lines.)

**DIAMOND TREAD CO. (CHART), LTD.**, Swan Lane Quarries, Little Chart, Ashford, Kent. Quarry owners, tarmac, macadam, bituminous macadam and dry roadstone suppliers. All inquiries to Area Office: Ditton Court Quarry, Arkfield, near Maidstone, Kent. (Tel.: W. Malling 3444.)

**HALL AND CO., LTD.**, Canning Street, Maidstone. (Tel.: Maidstone 51051.) and at Folkestone and Hayes. Pits at Lunford, near Larkfield, Riverhead. Gravel aggregates, concreting, plastering and building sand. Surecrete precision-mixed concrete.

**HARRIS, M. P. AND CO., LTD.**, Station Road, Paddock Wood, Kent. (Tel.: 385.) (See Sussex.)

**TILBURY CONTRACTING AND DREDGING CO., LTD.**, Postley, Maidstone. (Tel.: Maidstone 55401/2/3.) Suppliers of tarrad, bituminous and dry Kentish ragstone, sea walling, asphalt fillers, Scotch granite and kerbing.

## LANCASHIRE

**BROOMBYS, LTD.**, Sandside, Milnthorpe. (Tel.: 3251/2.) Westmorland. (See Westmorland.)

**BUCKTON QUARRY**, Broken stone, all grades. (Tel.: Mossley 123.) Or write Main Road, Oldham.

**CASTLETON SAND AND GRAVEL QUARRIES, LTD.**, Trows Lane, Castleton, near Rochdale. (Tel.: Castleton 57100.) Lee Quarries, Bacup. (Tel.: Bacup 287.) Washed and crushed, washed stone aggregates, pitching stone.

**CROXED GRAVEL, LTD.**, Cheadle, Stoke-on-Trent, Staffs. (Tel.: Tean 393.) Manchester Office: Blackfriars 3766/7. Plant capacity, 2,000 tons per day.

**DUNNING AND SON, LTD.** (See Shropshire.)

**HARTLEY, JOHN W., LTD.**, Lundsfield Quarry, Carnforth, Lancashire. (Tel.: 100.) Large producers of highest quality washed sands, clean washed natural pebble and crushed gravel aggregates for all constructional purposes.

**HILTON GRAVEL LTD.**, Rice Street, Liverpool Road, Manchester, 3. (Tel.: Deansgate 5455 and 5456.) Quarries at Cheadle, Staffs. (Tel.: Tean 241.) And at Longton, Stoke-on-Trent. (Tel.: Longton 32196.)

**HULLAND GRAVEL CO., LTD.**, Cheadle, Stoke-on-Trent. (Tel.: Cheadle 2323/4, 2119 and 2195.) Manchester Office: 454 Wilbraham Road, Chorlton, Manchester, 2.

**PENMAENMAWR AND WELSH GRANITE CO., LTD.**, all sizes and gradings of crushed granite aggregate. Immediate delivery ex stock.

**LIVERPOOL AND PRESTON DEPOSITS:** Office: 7 Picton Road, Liverpool, 15. (Tel.: Seton Park 7261.)

**TERN HILL SAND AND GRAVEL CO., LTD.**, Alington Quarries, near Market Drayton, Staffs. (Tel.: Hales 2612/3.) (See Staffs. for details.)

**TRENTHAM GRAVEL CO., LTD.**, Lodsley Quarries, near Loughborough. (Tel.: Market Drayton 6110.) (Tel.: Pipe Gate 304/5.) All sizes crushed or natural washed gravel. Twice washed sharp concrete sand. Plastering sand. Plant capacity: 2,000 tons per day.

**WITHERS LESTER, LTD.**, Black Lane Quarry, Carnforth. (Tel.: Carnforth 327.) Graded limestone aggregate to B.S.S., all sizes. Immediate delivery ex stock.

**X.L. GRANITE (INGLETON), LTD.**, Head Offices: Clapham, via Lancaster. (Tel.: Clapham 318/9.) Works Tel.: Ingleton 231. All sizes and gradings of Ingleton granite aggregate.

## LEICESTERSHIRE

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London Office: VIGILANT 2530.) Best Leicester-shire grey granite, dry and coated purdies to any specification, cold asphalt and wet mix. Prompt rail/road delivery.

**CLIFFE HILL GRANITE CO., LTD.**, Markfield, near Leicester. (Tel.: Markfield 5612/3.) Granite aggregates to B.S.S. All sizes. Tarrad and bituminous granite, concrete slabs and kerbs.

**DUSTON STONE QUARRIES, LTD.**, New Duston, Northampton. (Tel.: Brixworth 278 and 298; Duston 505.) (See Northamptonshire.)

**ENDERBY AND STONEY STANTON GRANITE CO., LTD.**, 21 New Walk, Leicester. (Tel.: 56682.) Quarries at Enderby, Leicestershire. Client's speciality, pink granite a speciality.

**HILTON GRAVEL, LTD.**, Hemington Fields, near Shardlow, Derby. (Tel.: Shardlow 266.)

**HOVERINGHAM GRAVEL CO., Hoveringham, Nottingham.** (Tel.: Lowdham 5171—15 lines.) (For details, see Nottinghamshire.)

**MOUNTSOREL GRANITE CO., LTD.**, 21 New Walk, Leicester. (Tel.: 56682.) Quarries at Mountsorel, near Loughborough. (Tel.: Loughborough 6111.) (Tel.: London Office: 29 Dorset Sq., N.W.1. (Amb. 1141.)

**WANLIP GRAVELS, LTD.**, Wanlip Road, Syston, Leicestershire. All sizes and gradings of tarrad, balanced ballast. All to B.S.S. (Tel.: Syston 2327 and 2797.)

**WREAKE VALLEY GRAVELS CO., LTD.**, Melton Mowbray. (Tel.: Pits—Rotherby 205 or head office: Melton 2488.) All grades washed aggregates and sand.

## LINCOLNSHIRE

**CONINGSBY SUPPLY CO., LTD.**, Registered Office: The Broadway, Woodhall Spa, Lincs. (Tel.: Woodhall Spa 3150.) Screened limestone, hardcore, pitching, filling, flint, hoggins, Ex quarries or delivered.

**DOW-MAC (PRODUCTS), LTD.**, Tallington, Stamford. All grades of washed sand and gravel. (Tel.: Market Deeping 2301.)

**EAST MIDLANDS BUILDERS' SUPPLY CO.**, 21 Castle-dyke West, Barton-on-Humber, Lincs. (Tel.: Barton 2189.) All grades washed sand and gravel, roadstone, hardcore, washed silica sand.

**GIBBONS, F. B. AND SONS, LTD.**, Registered Office: Welby House, Market Deeping, near Peterborough. (Tel.: Market Deeping 3321 2383.) Pits at Langtoft, near Peterborough. (Tel.: Market Deeping 2210.) All grades washed sand and aggregates.

**HARTSHOLME WOOD AND SAND CO., LTD.**, Hartsholme Grove, Doddington Road, Lincoln. Sole selling agents: Hartsholme Sales, Ltd., 17 West Parade, Lincoln. (Tel.: Lincoln 23391.)

**HOVERINGHAM GRAVEL CO.**, Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

**HURDIS, J. W., LTD.**, Victoria Street, Grimsby. (Tel.: Grimsby 3657) and Caistor. (Tel.: Caistor, Lincs., 281.) Building, plastering, concreting sand; also gravel, ballast, hoggins and roadmaking materials.

**PETERBOROUGH QUARRIES, LTD.**, Sandylands, Maxey, Peterborough. (Tel.: Market Deeping 2355—3 lines.) Quarry at Ropsley, all grades of hardcore and broken stone. (See also Northants.)

**POLLARD, AND SON (TALLINGTON), LTD.**, Way House, Langtoft, Peterborough. Pits at Tallington, near Stamford, Lincs. (Tel.: Market Deeping 2140.) All grades washed sand and aggregates. For Supercrete ready mixed concrete, phone Market Deeping 3132.

**TRENTFORD GRAVELS, LTD.**, Head Office: Deansgrove, Grimsby. (Tel.: Grimsby 5354.) Washed and graded gravel and sand, roadstone, hardcore, slag, tarmac, ashes, etc. Pits and quarries throughout the county.

## LONDON

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**BUCBRICKS COMPANY, LTD.**, 57 Piazza Chambers, Covent Garden, London, W.C.2. (Tel.: Covent Garden 0534.) All grades of washed aggregates, sand, building sand, asphalt, grit, Sterilised dry sand accurately graded to buyers' requirements.

**COX, H. AND SONS, LTD.**, 33 Southampton Way, Camberwell, S.E.5. (Tel.: Rodney 215—3 lines.)

**DANGERFIELD, F. J. AND CO., LTD.**, 261A Finchley Road, N.W.3. (Tel.: HAMstead 8044-8.) Granite limestone or slag, coated or dry, all sizes, also pitching, kerb and setts, felspar quartz and other minerals by road or rail, or ex London stock.

**DORSET LESTER, LTD.**, Bumpers Lane, Easton, Portland, Dorset. (Tel.: Portland 2207 8.) (For details, see Dorset.)

**DRINKWATER, W. W. (WILLEDEN), LTD.**, Dudden Hill Lane, Willesden, N.W.10. (Tel.: GLadstone 6400 5.) Pits: Rush Green, Denham, Bucks. (Tel.: Denham 2241 2/3.) Also 300 Acres Road, Hounslow Heath, Middlesex. (Tel.: Hounslow 6222 3.)

**GABRIEL, C. LTD.**, Palmers Lane, Enfield, Middx. (Tel.: HOWard 4351 2/3.) Washed aggregates and building sand. Pits at Enfield and Hertford.

**GREENHAM SAND AND BALLAST CO., LTD.**, Chertsey Road, Feltham. (Tel.: Feltham 2285 7.) Pits at Hounslow, Feltham and Staines. Concrete aggregates, plastering and building sand.

**HALL AND CO., LTD.**, Chantry House, Eccleston Street, S.W.1. (Tel.: Sloane 7122.) and at East Dulwich, Poplar and Wandsworth. Gravel aggregates, concreting, plastering and building sand.

**HARTIGAN, G. F. X., LTD.**, Washed sharp sand to B.S.S. 882. (See Buckinghamshire.)

**KEEN, W. J. AND SONS**, 18 Granville Road, Epping, Essex. (Tel.: Epping 2520.) All sands, ballasts, shingle and hardcore supplied.

**LONDON BALLAST CO., LTD.** (Tel.: Paddington 5064.) 55A Porchester Terrace North, Paddington, W.2.

**READ, P. T., LTD.**, Gales Gardens, Bethnal Green, E.2. (Tel.: Shoreditch 9128 9.) All sands, ballast and shingles supplied and delivered; also ready mixed concrete. Pits: Fairlop Airfield, Forest Road, Hainault, Essex. (Tel.: Hainault 6111 2/3.)

**SHAKEMANTLE QUARRY CO., LTD.**, Cinderford, Glos. (Tel.: Cinderford 3197.) "Doura" Facing, Engineering and Common Bricks in terra-cotta, red and golden brown. (See Glos.)

## MERIONETHSHIRE

**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington. (Tel.: 961.) Salop.

## MIDDLESEX

**CROSS, GEO. C. AND CO., LTD.**, Uxbridge Road, Southall. (Tel.: Southall 2264 3/6.) Concrete aggregates, hardcore, excavations, demolitions.

**DRINKWATER, W. W. (WILLEDEN), LTD.**, Staines Rd., Hounslow, Hm., Middx. (Hounslow 6222 3.)

**GABRIEL, C. LTD.**, Palmers Lane, Enfield, Middx. (Tel.: HOWard 4351 2/3.) Washed aggregates and building sand. Pits at Enfield and Hertford.

**GREENHAM SAND AND BALLAST CO., LTD.**, Chertsey Road, Feltham. (Tel.: Feltham 2285 7.) Pits at Hounslow, Feltham and Staines. Concrete aggregates, plastering and building sand.

**GRUNDON, S.**, 79 Harrington Road, Hillingdon, Middlesex. (Tel.: Uxbridge 4156.) Sand, ballast, shingle, hardcore, ashes, excavation and demolition.

**HALL AND CO., LTD.**, Chantry House, Eccleston Street, S.W.1. (Tel.: Sloane 7122.) and at Ashford and Brentford. Pits: Bedford and Shepperton. Gravel aggregates, concreting, plastering and building sand.

**LONDON BALLAST CO., LTD.** (Tel.: Paddington 5064.) 55A Porchester Terrace North, Paddington, W.2.

**TWICKENHAM GRAVEL CO., LTD.**, Feltham Hill, Rotherham, Yorkshire. (Tel.: Feltham 1635.)

**READ, P. T., LTD.**, Gales Gardens, Bethnal Green, E.2. (Tel.: Shoreditch 9128 9.) All sands, ballast and shingles supplied and delivered; also ready mixed concrete. Pits: Edmondton Gravel Pit, Montagu Road, N.9. (Tel.: Shoreditch 9128 9.) and Fairlop Airfield, Forest Road, Hford. (Tel.: Hford 6111 2/3.)

**STUART MACEY, LTD.**, Gordon Rd., High Wycombe. (Tel.: High Wycombe 2591 2.)



# CONTRACTORS' GUIDE TO AGGREGATES

## MID-WALES

**BENGRI AND SONS, LTD.**, Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301/4.) (See details under Herefordshire.)

**NASH ROCKS STONE AND LIME CO., LTD.**, Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire for details.)

**OLD RADNOR TRADING CO., LTD.**, Quarries in Radnorshire. (Tel.: Kingston 421.) (See Herefordshire.)

**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington (Tel. 961), Salop.

**TERN HILL SAND AND GRAVEL CO., LTD.**, Alington Quarries, near Market Drayton, Staffs. (Tel.: Hales 261 2/3.) (See Staffs. for details.)

## MONMOUTHSHIRE

**MONMOUTHSHIRE ASSOCIATED QUARRIES, LTD.**, Head Office: 38, Chestnut Road, Newport, Mon. (Tel.: Newport 5831 2.) Suppliers of all grades of concrete aggregates, road metal, pitching stone, tarmacadam and bituminous macadam in limestone, dolomite, bluish pennant stone. Quarries throughout the county.

**SHAKEMANTLE QUARRY CO., LTD.**, Cinderford, Glos. (Tel.: Cinderford 3197.) "Doura" Facing, Engineering and Common Bricks in terra-cotta, red and golden brown. Concrete aggregates, road-stones, and Dolomite media.

**WHITECLIFF QUARRIES AND BRICKWORKS, LTD.**, Coleford, Glos. (Tel. 3158 9.) (See Gloucestershire.)

## MONTGOMERYSHIRE

**NASH ROCKS STONE AND LIME CO., LTD.**, Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire for details.)

**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington (Tel. 961), Salop.

## NORFOLK

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**JOHNSON, P. C. H., LTD.**, Station Road, Terrington St. Clement, near King's Lynn, Tel.: Terrington St. Clement 248.) Washed and screened gravel, roadstone, washed sharp and fine sands.

**ST. IVES SAND AND GRAVEL CO., LTD.**, 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441 2 3/4 and 2441 3/4.) Pits at St. Ives and Knettishall, near Thetford.

**SNETTERTON STONE QUARRIES, LTD.**, Pix Farm Lane, Hemel Hempstead, Herts. (Tel.: Berkhamstead 1208 9.) Pits at Snnetterton. Concrete aggregates, building sand.

**THORPE GRAVEL PITS, LTD.**, Harvey Lane, Norwich. (Tel.: Norwich 33243 4.) Washed and graded aggregates, stone and gravel delivered to all parts of Norfolk and Suffolk.

## NORTHAMPTONSHIRE

**AMEY'S AGGREGATES, LTD.**, Lower Wootton, Boars Hill, Oxford. (Tel.: Oxford 35421—10 lines.) Pits at Dry Sandford, near Abingdon, Sutton Courtenay, near Abingdon. (Tel.: Sutton Courtenay 275.) Theale, near Reading. (Tel.: Theale 358.) Dorchester, Oxford. (Tel.: Warborough 473.) Billing, Northampton. (Tel.: Cogenhoe 564.) For washed and graded aggregates to B.S.S.

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**BICESTER STONE CO., LTD.**, Stratton Audley, Bicester, Oxon. (Tel.: Stratton Audley 238.) Manufacturers and suppliers of all grades limestone tarmacadam, dry pitching stone, hardcore, etc.

**BILLING GRAVEL CO., LTD.**, Station Road, Billing, Northampton. (Tel.: Cogenhoe 219.) London Office: 23 Berkeley Square, W.1. (Tel.: Mayfair 6341.)

**BRAYBROOK, E. W., LTD.**, Newton Road, Higham Ferrers, Northants. (Tel.: Rushden 3344 and 3345.) All grades of washed and graded aggregates to B.S.S., building sand, hardcore.

**DOW-MAC (PRODUCTS), LTD.**, Tallington, Stamford. All grades of washed sand and gravel. (Tel.: Market Deeping 2301.)

**DUSTON STONE QUARRIES, LTD.**, New Duston, Northampton. (Tel.: Brixworth 278 and 298; Duston 505.) Producers of building and walling stone, roadstone, hardcore, broken stone, ashes, sand, gravel and hoggins. Immediate delivery throughout Northamptonshire.

**FERRERSAND AGGREGATES, LTD.**, Northampton Road Quarries, Rushden, Northants. (Tel.: Rushden 2354 5.) Largest producers in the county of all grades of high-quality concrete aggregate to B.S.S. Deliveries throughout Northamptonshire and adjoining counties.

**GIBBONS, F. B. AND SONS, LTD.**, Welby House, Market Deeping, Peterborough. (Tel.: Market Deeping 3321 2383.) (See Lincolnshire for details.)

**HOVERINGHAM GRAVEL CO.**, Hoveringham, Nottingham. (Tel.: Louth 3171—15 lines.) (For details, see Nottinghamshire.)

**KETTON STONE CO.** (Prop. Andrew's Garage), Ketton, near Stamford. (Tel.: Ketton 206.) Hardcore, roadstone, crushed stone, top soil, silica clay. Quarries at Ketton.

**MACKANESS, A. J., LTD.**, Ransome Road, Northampton. (Tel.: Northampton 589.) Producers of all grades of washed aggregates. Building sand, Mixmortar (lime sand mortar). Prompt deliveries.

**NENE BARGE AND LIGHTER CO., LTD.**, Market Chambers, Peterborough. (Tel.: 5334 5.) and Ship End Quarries, Wansford, near Peterborough. (Tel.: Wansford 384 5.) Roadstone, hardcore, broken stone, ballast, ashes, silica clay and sand.

**NEWARK (PETERBOROUGH) SAND AND GRAVEL CO., LTD.**, 127 Eastford Road, Peterborough. (Tel.: Peterborough 2091.) All grades washed and screened gravel and sand.

**PETERBOROUGH QUARRIES, LTD.**, Sandylands, Maxey, Peterborough. (Tel.: Market Deeping 2355.) Eight quarries supplying all grades of hardcore and broken stone. Also Wetmix at Yarwell, Wansford. All grades gravel and sand at Maxey.

**POLLARD, C. AND SON (TALLINGTON), LTD.**, Walk House, Langtoft, Peterborough. (Tel.: Market Deeping 2140.) (See Lincolnshire for details.)

**STORTON, F. E., LTD.**, Weedon Road, Northampton. (Tel.: Northampton 3358.) Producers of washed gravel and sand to B.S.S.

## NORTH WALES

**CAWDO, WHARTON AND CO., LTD.**, Pistyll Gwyn Quarry, Llanarmon, near Mold. (Tel.: Llanarmon-y-lai 27.) Crushed limestone and tarred macadam, all grades.

**CHESHIRE AND NORTH WALES TARRED MACADAM CO., LTD.**, Llanarmon, near Mold. (Tel.: Llanarmon-y-lai 43.) Hard, broken limestone; dry and coated to B.S.S. Inquiries to Registered Office—Market Chambers, Tower Square, Tunstall, Stoke-on-Trent. (Tel.: Stoke-on-Trent 88094.)

**ENSTON BROS.**, Llwyn Isaf Quarry, Clynoglawr, Caernarvon. (Tel.: Clynoglawr 297 8.) All sizes crushed, washed natural sand and gravel. Highest quality. Precast concrete products, ex our Griffiths Crossing Factory, Caernarvon. (Tel.: Caernarvon 2535 6.) Crushed granite ex our quarry, Pengwern and Gwydyr Quarries, Ltd., Trefriw, Llanrwst, Denbighshire. (Llanrwst 38.)

**PENMAENMAWR AND WELSH GRANITE CO., LTD.**, Quarries at Penmaenmawr. (Tel.: 2256 8.) and at Trevor. (Tel.: Clynoglawr 223.) Caernarvonshire. All sizes and gradings of crushed granite aggregate. Any quantity per day: immediate delivery ex stock. Coated granite also available.

**RUTHIN AND DENBIGH TARMACADAM CO., LTD.** (a member of the Lunt, Comley and Pitt Group), Denbigh. (Tel.: Denbigh 75.) Lime, limestone, carbonate of lime, tarmacadam, etc. Also inquiries to Lunt Bros. Ltd., Gazette Buildings, 168 Corporation Street, Birmingham. (Tel.: Central 7408.) and Lunt Bros., Ltd., Stourbridge. (Tel.: 5201—8 lines.)

**TERN HILL SAND AND GRAVEL CO., LTD.**, Alington Quarries, near Market Drayton, Staffs. (Tel.: Hales 261 2/3.) (See Staffs. for details.)

## NOTTINGHAMSHIRE

**AIZLEWOOD, DOUGLAS E.**, Bow Bridge, Rotherham. (Tel.: Rotherham 2622.) Crushed and graded limestone: all grades of washed gravel and sands.

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**GLEN QUARRIES, LTD.**, Central Chambers, Wellgate, Rotherham. (Tel.: Rotherham 5223.) Crushed and graded stone, concrete sand, building sand, plastering sand and crushed gravel, could be collected ex quarry or delivered.

**GUNTHORPE GRAVELS (1958), LTD.** (Tel.: Nottingham 77357; and Works: Louth 2131.) (An associate company of T. C. Campbell, Ltd.) All grades washed gravel and sand to B.S.S.

**HOVERINGHAM GRAVEL CO.**, Hoveringham, Nottingham. (Tel.: Louth 3171—15 lines.) Quarries at Hoveringham, Holme, Pierpoint Colwick, Gussy and Newark. All grades of washed gravel and sand to any specification. Crushed quartz for surface dressing of roads a speciality. Plant capacity 8,000 tons per day.

**NEWARK GRAVEL AND CONCRETE CO., LTD.**, Grove St., New Adderley, Newark, Notts. (Tel.: Newark 401.) All grades washed sand and aggregates.

**NORTH NOTTS. GRAVEL CO., LTD.**, Bellmoor, Retford, Notts. (See Yorkshire.)

**SALISBURY AND WOOD, LTD.**, Cotenay 275, 272 273.) (For details, see Derbyshire.)

## OXFORDSHIRE

**AMEY'S AGGREGATES, LTD.**, Lower Wootton, Boars Hill, Oxford. (Tel.: Oxford 35421—10 lines.) Pits at Dry Sandford, nr. Abingdon, Sutton Courtenay, nr. Abingdon. (Tel.: Sutton Courtenay 275.) Theale, near Reading. (Tel.: Theale 358.) Dorchester, Oxon. (Tel.: Warborough 473.) Billing, Northampton. (Tel.: Cogenhoe 564.) For washed graded aggregates to B.S.S.

**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**BENGRI AND SONS, LTD.**, Longmoor, Kingsland, Herefordshire. (Tel.: Kingsland 301/4.) (See details under Herefordshire.)

**BICESTER STONE CO., LTD.**, Stratton Audley, Bicester, Oxon. (Tel.: Stratton Audley 238.) Manufacturers and suppliers of all grades limestone, tarmacadam, dry pitching stone, hardcore, etc.

**CURTIS, J. AND SONS, LTD.**, Botley Works, Oxford. (Tel.: Oxford 41081 2/3.) Sand and all grades of washed aggregates. Pits at Radley, near Abingdon. (Tel.: Abingdon 441.)

**DANGERFIELD, F. J. AND CO., LTD.**, 261A Finchley Road, London, N.W.3. (Tel.: HAMstead 8044/8.) For all road aggregates, kerbs, setts. (See London.)

**DIX, G. H. AND SON, LTD.**, Freeland, Oxon. (Tel.: Freeland 234.)

**DUSTON STONE QUARRIES, LTD.**, New Duston, Northampton. (Tel.: Brixworth 278 and 298; Duston 505.) (See Northamptonshire.)

**GRUNDON, S. (EVELME), LTD.**, Evelme, Oxon. (Tel.: Evelme 20.) London Office. (Tel.: Uxbridge 4156.) All grades washed aggregates, Path hoggins, broken stone, building sand.

**HALL AND CO. LTD.**, Cardiff Road, Reading.

**HAINES, H. (WITNEY) LTD.**, Oxford Road, Witney. (Tel.: Witney 42.) All grades washed aggregates, hardcore, pitching and broken stone, Cotswold building and walling stone.

**SNETTERTON STONE QUARRIES, LTD.**, Pix Farm Lane, Hemel Hempstead, Herts. (Tel.: Berkhamstead 1208 9.) Roadstone, Cotswold building and walling stone.

## RADNORSHIRE

**BENGRI AND SONS, LTD.**, Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301/4.) (See details under Herefordshire.)

**CLEE HILL TRANSPORT AND ROLLING CO., LTD.**, Ludlow, Salop. (Tel.: Cleehillstone 284.) (See Shropshire.)

**NASH ROCKS STONE AND LIME CO., LTD.**, Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire for details.)

**OLD RADNOR TRADING CO., LTD.**, Quarries in Radnorshire. (Tel.: Kingston 421.) (See Herefordshire.)

**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington (Tel. 961), Salop.

## RUTLAND

**GIBBONS, F. B. AND SONS, LTD.**, Welby House, Market Deeping, Peterborough. (Tel.: Market Deeping 3321/2383.) (See Lincolnshire for details.)

## RUTLAND

**HOVERINGHAM GRAVEL CO.**, Hoveringham, Nottingham. (Tel.: Louth 3171—15 lines.) (For details, see Nottinghamshire.)

**KETTON STONE CO.** (Prop. Andrew's Garage), Ketton, near Stamford. (Tel.: Ketton 206.) Hardcore, roadstone, crushed stone, top soil, silica clay. Quarries at Ketton.

**PETERBOROUGH QUARRIES, LTD.**, Sandylands, Maxey, Peterborough. (Tel.: Market Deeping 2355.) Quarry at Greettham, all grades of broken stone and hardcore. (See also Northamptonshire.)

**POLLARD, C. AND SON (TALLINGTON), LTD.**, Walk House, Langtoft, Peterborough. (Tel.: Market Deeping 2140.) (See Lincolnshire for details.)

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**BALLIDON QUARRIES, LTD.**, Ballidon, near Ashbourne, Derbyshire. (Tel.: Parwich 201 and 202.) Clean and graded dry limestone to B.S.S., all sizes; coated limestone to B.S. 802 and 1621 and wet-mix; large output; reliable deliveries.

**BENGRI AND SONS, LTD.**, Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301/4.) (See details under Herefordshire.)

**CLEE HILL TRANSPORT AND ROLLING CO., LTD.**, Ludlow, Salop. (Tel.: Cleehillstone 284.) Granite stone, tarmac, chippings, filter media, setts, limestone, crushed and walling stone, gravel, sand, hardcore and ashes.

**DORRINGTON SAND AND GRAVEL QUARRIES**, near Shrewsbury. (Tel.: Dorington 276.) Supplies of ready mixed concrete, building sand, washed sand, washed and crushed gravel.

**DUNNING AND SON, LTD.**, Haughmond Quarry, near Shrewsbury. (Tel.: Upton Magna 206/7.) All grades of high-quality roadstone, concrete aggregates and coated macadam. All to B.S.S. Any tonnage available for immediate delivery.

**NASH ROCKS STONE AND LIME CO., LTD.**, Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire for details.)

**OLD RADNOR TRADING CO., LTD.**, Kingston. (Tel.: 421.) (See Herefordshire.)

**SALOP SAND AND GRAVEL SUPPLY CO.**, Admaston, Wellington (Tel. 961), Salop.

**TERN HILL SAND AND GRAVEL CO., LTD.**, Alington Quarries, near Market Drayton, Staffs. (Tel.: Hales 261 2/3.) (See Staffordshire for details.)

**TRENTHAM GRAVEL CO., LTD.**, Lordsley Quarries, Willoughbridge, near Market Drayton, Staffs. (Tel.: Pipe Gate 304/5.) All sizes crushed or natural washed gravel. Twice washed sharp concreting sand, plastering sand. Plant capacity: 2,000 tons per day.

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**DANGERFIELD, F. J. AND CO., LTD.**, 216A Finchley Rd., London, N.W.3. (Tel.: HAMstead 8044/8.) For all road aggregates, kerbs, setts. (See London.)

**GILSON, S. C. AND SONS, LTD.**, Holcombe, near Bath. (Tel.: Stratton-on-the-Fosse 243.)

**HALL AND CO., LTD.**, Longmoor House, Ashton Vale Road, Bristol, 3. (Tel.: 63001.) Gravel aggregates, concreting, plastering and building sand.

**WAINWRIGHT, JOHN AND CO., LTD.**, Shepton Mallet. (Tel.: Shepton Mallet 2366 7.) All sizes basalt, coated basalt, concrete aggregates, filtering media, building blocks and slabs.

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**ESK MANUFACTURING CO., LTD.**, Carlisle. (Tel.: Carlisle 2-4941.) (For details see Cumberland.)

## SOUTH WALES

**CARDIGAN SAND AND GRAVEL CO., LTD.**, Pen Parc, Cardigan, S. Wales. (Tel.: Cardigan 2342.) Washed and graded building, plastering, and concreting sand. Washed gravel.

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**SHAKEMANTLE QUARRY CO., LTD.**, Cinderford, Glos. (Tel.: Cinderford 3197.) "Doura" Facing, Engineering and Common Bricks in terra-cotta, red and golden brown. (See Glos.)

**SOUTH WALES SAND AND GRAVEL CO., LTD.**, Head Office: P.O. Box 8, Beaufort Buildings, Swansea. (Tel.: Swansea 53071.) Sand and gravel merchants, builders' merchants. Pennant Quarry owners slag, hardcore, ashes, filling, graded clinker filter media. Depots: Cardiff, Newport, Barry, Port Talbot, Briton Ferry, Swansea, Llanelli.

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**BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD.**, near Leicester. (Tel.: Coalville 1226 7/8; or London: VIGILANT 2530.) (For details, see Leics.)

**CROXDEN GRAVEL, LTD.**, Cheddar, Stoke-on-Trent. Staffs. (Tel.: Tean 393.) Manchester Office: Blackfriars 3766 7. Plant capacity 2,000 tons per day.

**DUNNING AND SON, LTD.**, Wood End Gravel Pits, Hednesford. (Tel.: Hednesford 302/325.) Washed sand and gravel. All to B.S.S. High-quality roadstone, concrete aggregates and coated macadam from our Haughmond Quarry, near Shrewsbury. (See Shropshire.)

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**HULLAND GRAVEL CO., LTD.**, Cheddar, Stoke-on-Trent. (Tel.: Cheddar 2323 4, 2119 and 2195.) Manchester Office: 464 Wilbraham Rd., Chorlton, Manchester, 21. (Tel.: Chorlton 2274 5.)

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**KEVIN LIME CO., LTD.**, Oakamoor, Staffs. (Tel.: Oakamoor 385 386.) Clean graded dry limestone, all to B.S.S. sizes. Output 1,000 tons per day.

**RUGELEY GRAVEL CO., LTD.**, Rugeley Quarries, Rugeley, Staffs. (Tel.: Rugeley 251 2.) Entirely modern plant. Sand classifiers. Finest aggregates to B.S.S. Large output.

**SALISBURY AND WOOD, LTD.**, Matlock. (Tel.: 272 273.) (For details, see Derbyshire.)

**SHIRE OAK GRAVELS, LTD.**, Lichfield Road, Walsall Wood, Staffs. Washed crushed gravel and washed sand. (Tel.: Brownhills 3253.)

**TERN HILL SAND AND GRAVEL CO., LTD.**, Almonington Quarries near Market Drayton, Staffs. (Tel.: Hales 261 2 3.) Pit sand, concrete sand, and all grades of washed crushed gravel. Hardcore, clinkers, ashes and boggins.

**TRENTHAM GRAVEL CO., LTD.**, Lordsley Quarries, Willoughbridge, near Market Drayton, Salop. (Tel.: Pipe Gate 304 5.) All sizes crushed or natural washed gravel. Twice washed sharp concreting sand. Plastering sand. Plant capacity 2,000 tons per day.

**WARDLOW LIMESTONE, LTD.**, Caudon Low, N. Staffs. (Tel.: Oakamoor 366.) Graded limestone for all purposes. Ground limestone.

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**MACLAREN BROS. (KENNETT), LTD.**, Station Road, Kennett, Cambs. (Kentford 333 4.) (See Cambs.)

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**WEBB, G., CAMBRIDGE, 35 Magrath Av., Cambridge.** (Tel.: 59966, 53969, 50353 (night).) (See Cambs.)

## SURREY

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**EASTWOODS SALES, LTD.**, Eastwood House, City Road, E.C.1. (Tel.: Clerkenwell 2040.) Longside Sand and Ballast Pit, Thorpe, nr. Egham. (Tel.: Egham 3121.) Runfold Sand and Ballast Pit, Runfold, nr. Egham, Surrey. (Tel.: Runfold 2020.) Producers and distributors of all grades of washed aggregates.

**GILSON, S. C. AND SONS, LTD.**, Holcombe, near Bath. (Tel.: Stratton-on-the-Fosse 243.)

**HALL AND CO., LTD.**, Victoria Wharf, Croydon. (Tel.: Croydon 4444.) Other main depots at Coulsdon, Epsom, Mitcham, Oxley, Purley, Redhill, Tadworth and Woking. Pits at Send and Redhill. Gravel aggregates, concreting, plastering and building sand, Surecrete precision-mixed concrete.

**HARRIS, M. P., AND CO., LTD.**, Kingston Road, Leatherhead, Surrey. (Tel.: 2497.) (See Sussex.)

**JANES AND CO., LTD.**, 2C Buckingham Avenue, Slough. Sand, aggregates, hardcore, ashes, bulking and bulk excavations. (Tel.: Slough 20561 2 3.)

**LONDON BALLAST CO., LTD.**, (Tel.: Paddington 5064.) 55A Porchester Terrace North, Paddington, W.2.

**MARCO (AGGREGATES), LTD.**, Pitt: Norlands Lane, Thorpe, near Egham. (Tel.: Chislesey 340.) Producers and distributors of high grade washed sand, shingle, ballast, etc.

**MARCO (CROYDON), LTD.**, Hampton Road, West Croydon. (Tel.: THORNE Heath 4236 7 8.) All building and road aggregates.

## SURREY

**TWICKENHAM GRAVEL CO., LTD.**, Government Road, Ash Vale. (Tel.: 2349.)

**WELLS, A. L. AND SON, LTD.**, Builders' Merchants, Garlands Road, Leatherhead. (Tel.: 3018 9.) Sand aggregates, hardcore, ashes, cement. Clinker block manufacturers.

**WINSON, W. R., LTD.**, Send, Woking. (Tel.: Ripley 2454 5.) All grades sand, shingle, ballast, hoggin and ashes. Clinker block manufacturers.

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**HALL AND CO., LTD.**, 16 Chapel Road, Worthing. (Tel.: Worthing 7840.) Other main depots at: Boshill, Bognor, Crowborough, East Grinstead, Eastbourne, Horsham, Hove and Seaford. Pits at Washington, Crambles, near Eastbourne, Chichester, Rye Harbour, Maresfield, Shoreham and Portslade. Gravel aggregates, concreting, plastering and building sand, Surecrete precision-mixed concrete.

**HARRIS, M. P., AND CO., LTD.**, West Station Goods Yard, Bechill. (Tel.: 61.) Cavendish Place, Eastbourne. (Tel.: 3800.) Dominion Road, Worthing. (Tel.: 8822.) Whitbread Lane, Northiam. (Tel.: 2211.) Station Goods Yard, Haywards Heath. (Tel.: 1750.) Crawley Road, Horsham. (Tel.: 3366.) The Horner, Chichester. (Tel.: 4181.) All grades aggregates, hardcore, clinker, ashes, etc.

**WRIGHT, C., AND SONS, (BTON), LTD.**, 19 Bristol Gardens, Brighton. (Tel.: Brighton 63357 and 62406.) All-in ballast, washed and crushed shingle, sand, ashes, hardcore, chalk, bricks, etc.

## WARWICKSHIRE

**BALLIDON QUARRIES, LTD.**, Ballidon, near Ashbourne, Derbyshire. (Tel.: Parwich 201 and 202.) Clean and graded dry limestone to B.S.S., all sizes, coated limestone to B.S. 802 and 1621 and wet-mix; large output reliable deliveries.

**DUSTON STONE QUARRIES, LTD.**, New Duston, Northampton. (Tel.: Brixworth 278 and 298.)

**HALL AND CO., LTD.**, 188 Lichfield Road, Four Oaks, Sutton Coldfield. (Tel.: Four Oaks 356.) Gravel aggregates, concreting, plastering, building sand.

**JUDKINS, LTD.**, Granite Quarries, Tuttle Hill, Nuneaton. (Tel.: Nuneaton 3411—10 lines.) All sizes washed granite aggregate, tarrad and bituminous macadam. Slab mix a speciality.

**KEVIN LIME CO., LTD.**, Oakamoor, Staffs. (Tel.: Oakamoor 385 386.) Clean graded dry limestone, all to B.S.S. sizes. Output 1,000 tons per day.

**SHAKEMANTLE QUARRY CO., LTD.**, Cinderford, Glos. (Tel.: Cinderford 3197.) "Doura" Facing, Engineering and Common Bricks in terra-cotta, red and golden brown. (See Glos.)

**SHIRE OAK GRAVELS, LTD.** (See Staffordshire.)

**WARDLOW LIMESTONE, LTD.**, Caudon Low, N. Staffs. (Tel.: Oakamoor 366.) (For details, see Staffs.)

## WESTMORLAND

**BROOMBYS, LTD.**, Sandside, Minthorpe, Westmorland. (Tel.: Minthorpe 3251 2.) All grades washed crushed gravel sand, limestone, granite chippings, pit sand, concrete sand, etc.

**ESK MANUFACTURING CO., LTD.**, Carlisle. (Tel.: Carlisle 2-4941.) (For details, see Cumberland.)

## WILTSHIRE

**AMEY'S AGGREGATES, LTD.**, Lower Wootton, Boars Hill, Oxford. (Tel.: Oxford 35421—10 lines.) Pits at Dry Sandford, near Abingdon, Sutton Courtenay, near Abingdon. (Tel.: Sutton Courtenay 275.) Theale, near Reading. (Tel.: Theale 358.) Dorchester, Oxon. (Tel.: Warborough 473.) Billinglinton, Northampton. (Tel.: Cogenhoe 564.) For washed and graded aggregates to B.S.S.

**BULL BROS., S. AND L., LTD.**, 126A High Street, Winchester. (Tel.: 2264.) (See Hampshire.)

**COKE, T. F. (CHELTENHAM), LTD.**, 287 Gloucester Road, Cheltenham. (Tel.: 4717 4874.) (See Glos.)

**DANGERFIELD, F. J. AND CO., LTD.**, 261A Finchley Road, London, N.W.3. (Tel.: HAMpstead 8044 8.) For all road aggregates, kerbs, setts. (See London.)

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## WILTSHIRE

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**TAYMAC, LTD.**, Wootton Bassett, near Swindon, Wilts. (Tel.: Wootton Bassett 391—5 lines.) Cotswold stone, hardcore, washed and graded aggregates, building sand.

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**BALLIDON QUARRIES, LTD.**, Ballidon, near Ashbourne, Derbyshire. (Tel.: Parwich 201 and 202.) Clean and graded dry limestone to B.S.S., all sizes, coated limestone to B.S. 802 and 1621, and wet-mix, large output, reliable deliveries.

**BENGRI AND SONS, LTD.**, Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301 4.) (See details under Herefordshire.)

**CLEE HILL TRANSPORT AND ROLLING CO., LTD.**, Ludlow, Salop. (Cleehillstone 284.) (See Shropshire.)

**DUNNING AND SON, LTD.** (See Shropshire.)

**KEVIN LIME CO., LTD.**, Oakamoor, Staffs. (Tel.: Oakamoor 385 386.) Clean graded dry limestone, all to B.S.S. sizes. Output 1,000 tons per day.

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**OLD RADNOR TRADING CO., LTD.**, Kingston, Tel. 421.) (See Herefordshire.)

**SHAKEMANTLE QUARRY CO., LTD.**, Cinderford, Glos. (Tel.: Cinderford 3197.) "Doura" Facing, Engineering and Common Bricks in terra-cotta, red and golden brown. (See Glos.)

## YORKSHIRE

**AIZLEWOOD, DOUGLAS E.**, Bow Bridge, Rotherham. (Tel.: Rotherham 2622.) Crushed and graded limestone, all grades of washed gravel and sands.

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**SALISBURY AND WOOD, LTD.**, Matlock. (Tel.: 272 273.) (For details, see Derbyshire.)

**STANLEY FERRY GRAVEL CO., LTD.**, Norwich Union Building, City Square, Leeds, 1. (Tel.: Leeds 26361.) Washed, crushed and natural graded sand and gravel, Supplies to specification, large daily production, Centre of Yorks. West Riding market. Pit: Wakefield.

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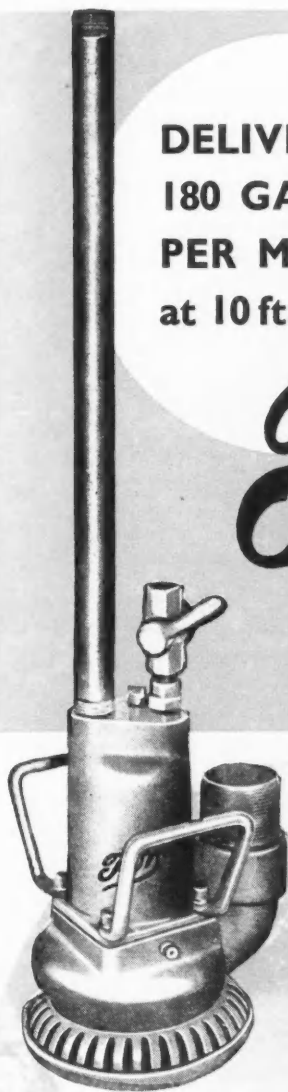
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Thor Power Tool, GmbH, Cologne-Braunsfeld, Steilberger Strasse 8, GERMANY. Tel: 6 22 93. Cables: Thortool, Koein.

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Birmingham Office: Fairbourne House, Ozella Street, Birmingham 1. Tel: MIDland 4835. Telegrams and Cables: Armwhitool, Birmingham.

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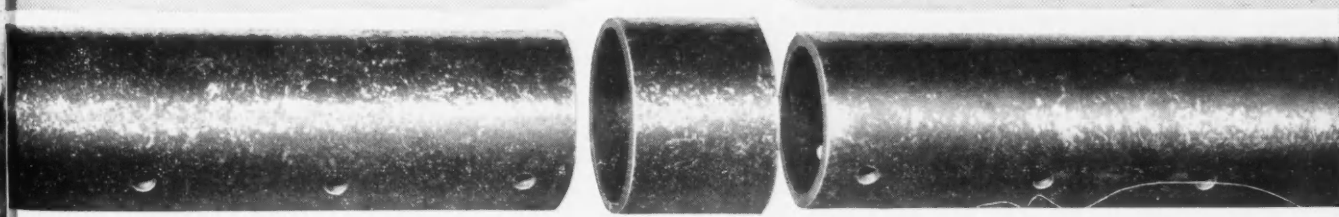




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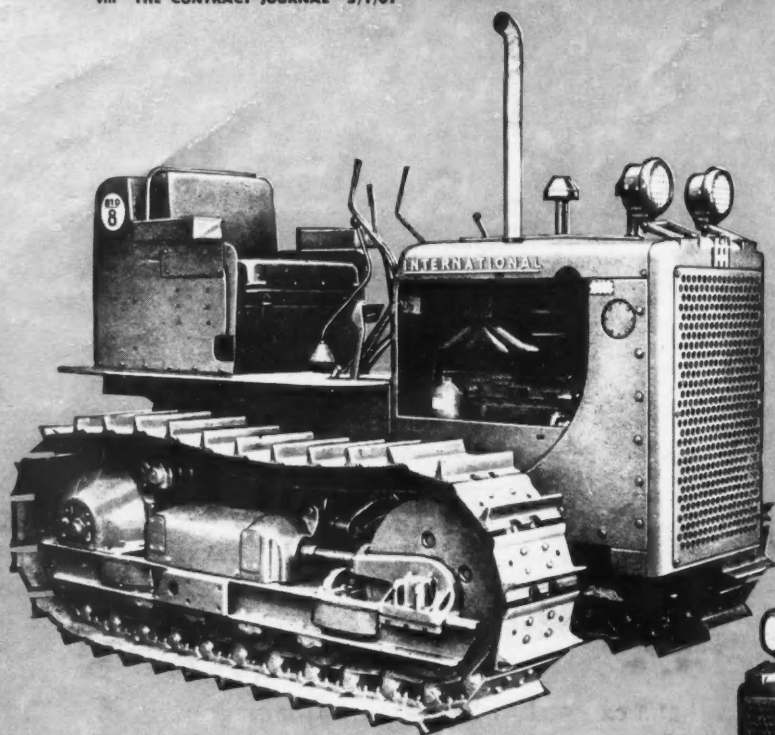
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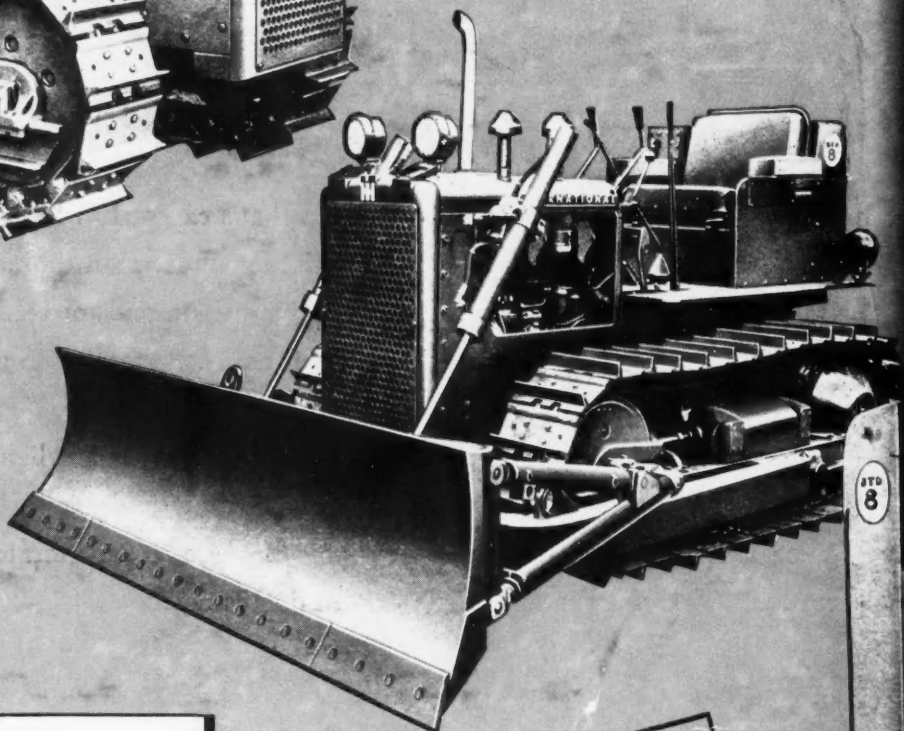
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